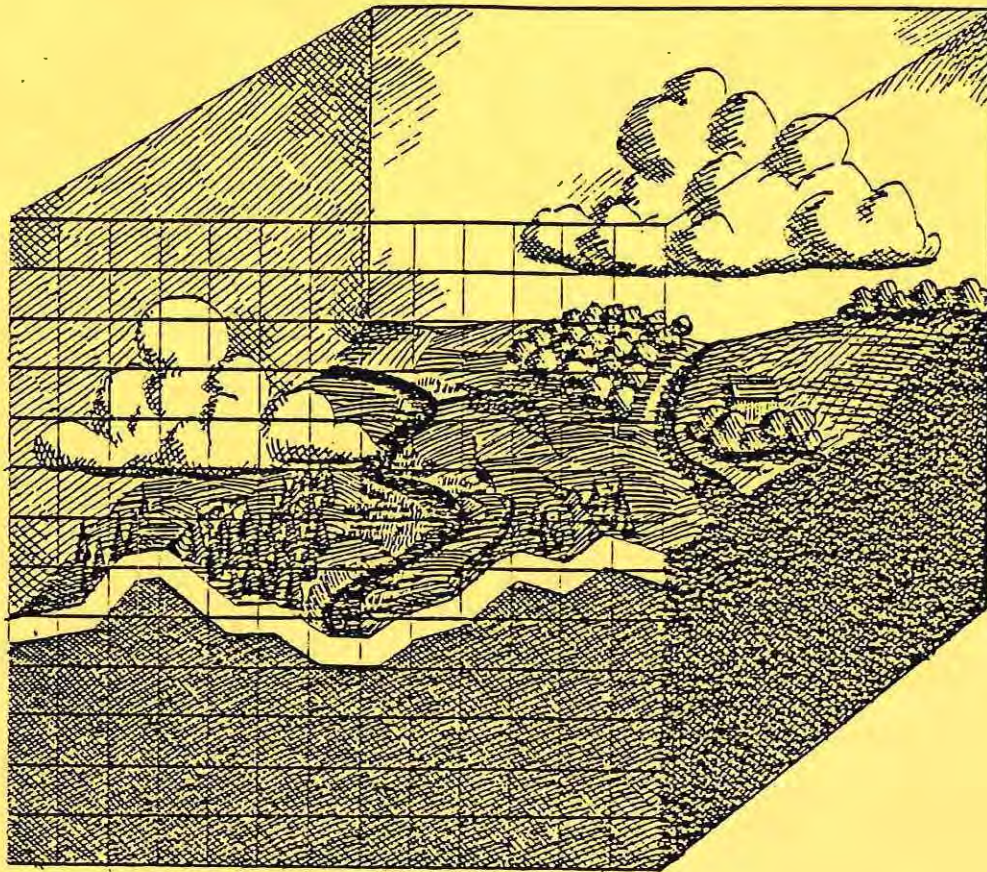




The
Connecticut
Council on
Environmental
Quality

COUNCIL REPORT
1982-1983

Table of Contents

Letter of Transmittal	I
Acknowledgements	II
CEQ Responsibilities	III
Introduction	IV
PART 1: <u>Hazardous Materials and Solid Wastes</u>	
Section 1: Solid Waste	2
Section 2: Oil and Chemical Spill Unit	12
PART 2: <u>Air Quality</u>	
Section 1: Acid Rain	15
Section 2: Emission Program	20
PART 3: <u>Water Related Activities</u>	
Section 1: Ground Water Classification System	27
Section 2: Water Quality	34
Section 3: Water Resources' Improved Enforcement Program	38
PART 4: <u>Conservation and Preservation</u>	
Section 1: Deer Management	42
Section 2: License Fee Increase	55
Section 3: Boat Registration	58
PART 5: <u>Coastal Area Management</u>	
Section 1: Coastal Area Management Program	61
PART 6: <u>Update</u>	
Section 1: Gypsy Moth	75
Section 2: Legislation- 1982	79
Section 3: Legislation- 1983	85
Section 4: New DEP Positions	
APPENDIX A. Development of NEPA	89
APPENDIX B. Political Greenhouse Effect	96
APPENDIX C. DEP Organization Chart	98



STATE OF CONNECTICUT

COUNCIL ON ENVIRONMENTAL QUALITY

STATE OFFICE BUILDING, RM. G-4A HARTFORD, CONNECTICUT
PHONE 566-3510

The Honorable William A. O'Neill
Governor, State of Connecticut
State Capitol Building
Hartford, Connecticut 06106

The Honorable James J. Murphy
Senate President Pro Tempore
Room 313, State Capitol Building
Hartford, Connecticut 06106

The Honorable Irving J. Stolberg
Speaker of the House of Representatives
Room 203, State Capitol Building
Hartford, Connecticut 06106

Dear Governor O'Neill, Senator Murphy and Representative
Stolberg:

It gives me great pleasure to transmit to you the Council
on Environmental Quality's eight Annual Report.

This report covers many aspects of Connecticut's
environment. The past activities of the Council have involved
it in questions concerning the status of Connecticut's air,
water, and land environments. The Council on Environmental
Quality has also become involved in investigating the adequacy
of the states natural resources and the recreational opportunities
for its residents. Additionally, the Council maintains a
review of new and existing state environmental programs.

Of continuing concern to the state is the disposal of
hazardous and solid waste. These issues are being addressed.
At present there is no facility in the state for hazardous waste
disposal. Existing landfill sites are rapidly being filled
to capacity. There is a strong need for the public to be
educated on resource recovery and recycling if the solid waste
problem is to be handled properly. Any workable plan in these
areas will need the acceptance of the public, and they should
be represented in all deliberations. The potential impact on
the state's drinking water supplies and other natural resources
from landfill sites is a prime concern to the citizens of the
state. Responsible planning and management by federal and
state agencies and private industries are needed to prevent any

long-term dangers to health and the quality of life.

Another major issue the Council on Environmental Quality has recognized is the potential conflict between environmental regulations such as the burning of high sulfur fuels and the discharge of pollutants into water courses. In some cases the health of the citizens of the state might be impaired. This issue is a renewal of the environment vs. economics argument. Trash to energy projects are another area where environmental regulations are going to be examined.

Another concern that needs consideration is the deteriorating infrastructure in the state. This encompasses the replacement and repairing of existing structures (highway, dams, bridges) or the building of new structures. The assessment of environmental impacts should be a major consideration when the state program moves forward.

Projects with students from various Connecticut colleges also continued to be a part of the Council on Environmental Quality. Various student reports have proved to be very timely when citizen concerns have arisen.

The Council has worked on many citizen requests during the past year. The divergent backgrounds of Council members has given the Council on Environmental Quality a balanced perspective in its deliberations. The workload of the Council on Environmental Quality has continued to be varied and geographically dispersed. The Council works with a number of state agencies and many private groups.

Finally, members of the Council would like to thank the many people who assisted us over the past year.

Respectfully submitted,


Donald MacKie
Chairman



STATE OF CONNECTICUT

COUNCIL ON ENVIRONMENTAL QUALITY

MEMBERS

Joyce K. Berry
Hamden

Donald L. MacKie
Canton

Charles W. Flynn
New Haven

Mary B. Walton
Jewett City

Thomas C. Jackson
New Haven

Maxine Weinstein
West Hartford

Grace Lichtenstein
Rowayton

Domenic J. Forcella
Executive Director

Also serving on the Council during this time:

Donald Blanchard
Westport

Edward Rice
Uncasville

Acknowledgements

The Council wishes to express its appreciation to the many people who worked on this report. The continued interest expressed by the people of Connecticut in our work is also acknowledged.

Additionally, our thanks go to Cindy Fazendeiro of the CEQ staff who performed many functions from beginning to end in compiling this report. Mary Doherty also worked for the CEQ in writing this report.

We would like to thank the CEQ interns for their work. Joan Helmacy (St Joseph's College) for her work on the Oil and Chemical Spill Unit. Wendy Stark (Connecticut College) contributed to the Water Resources section. Additions to the Gypsy Moth section were made by Shelly Dresser (Yale University). Peter O'Conner (UConn Law School) presented the section on the development of NEPA. Philip Melchionne (volunteer) for his work on Coastal Area Management. Jeffrey Mills (Political Greenhouse Effect) allowed us to reprint his Op-Ed article that appears in Appendix B.

And finally a word of thanks to the Department of Environmental Protection and other state agencies for their help in providing material to the CEQ for our reports and other requests.

* * * * *
* **IN MEMORIAM** *
* * * * *

The Council on Environmental Quality would like to acknowledge the passing of one of its members, Mr. Edward "Buster" Rice of Uncasville. Mr. Rice served on the Council from 1976 to 1984. His insights, constructive comments and good spirits will be greatly missed.

CEQ Responsibilities

The Council on Environmental Quality has the responsibility for reviewing all Environmental Impact Evaluations (EIEs) required by the Connecticut Environmental Policy Act (CEPA). The evaluations describe the potential environmental effects of proposed actions of state agencies.

The Council's review responsibilities bring it in contact with many state and federal agencies. The Department of Transportation has been one of the first agencies involved in this process. Their detailed roadway designs as well as environmental statements are submitted to the Council for review. Related to transportation are reviews of bridge structures that the United States Coast Guard has authority over. These are also received by the Council on Environmental Quality.

The Council on Environmental Quality has the responsibility to review and comment on various plans and proposals by the Department of Transportation and the Office of Policy and Management's State Clearinghouse. The Council on Environmental Quality has the opportunity to comment on transportation projects in various stages. The design meetings and draft environmental impact statements are two of these times. The Council on Environmental Quality receives urban systems projects and Federal Highway Administration proposals for comment.

Other materials received for comment by the Council on Environmental Quality include Industrial and Business Development (IBDs) project proposals. IBDs are program applications involving grants to municipalities to facilitate the planning of development projects, such as industrial parks or business expansion. These are commented on by the Council on Environmental Quality. The grants are from the Connecticut Department of Economic Development. Another review and comment aspect of the Council is the review of A-95s. A-95s are a preliminary form sent to state agencies for an initial review of a project, which occur when federal money is involved. The reviews take place very early in the development stages of the applications. They can point out areas where further study must be done during the application process, thus hopefully eliminating later and perhaps more costly problems. As with all programs, well thought and written regulations, quality review personnel, and continued quality monitoring are imperative. In addition, the Council may comment

to the Connecticut Siting Council. Copies of their applications are made available to the Council. With the concern for energy, more hydropower permits are being applied for. Our rivers may once again become a prime energy source but their other uses will have to be maintained. Also, telecommunications is an area of increased activity and responsibility. Additionally, when the Siting Council was formed to handle hazardous waste treatment facilities the Council on Environmental Quality was included in the legislation as a review agency.

Applications for licensing from the Federal Energy Regulatory Commission (FERC) also are sent to the Council. The applications have a section for opening the power company land to usage by the public. This is the first time this requirement has been made, and a comprehensive planning effort by the state and the utility company should insure proper usage of these lands. Other federal agencies such as the Environmental Protection Agency and the Department of Energy also ask for the Council on Environmental Quality comments. Much of this is in regard to rules and regulation promulgation. The other major source of reviews come from the Department of Environmental Protection. Besides reviewing as part of CEPA requirements, the Council on Environmental Quality gets involved with other aspects of the department. Permits (also reviewed in conjunction with the Corps of Engineers), regulations, and plans are sent to the Council.

Citizen complaints still provide the majority of involvement for the Council. Many requests cross department lines and require a good working relationship with various other state agencies. Some requests can be as simple as a correct phone number or reference person. Other times it can get as complicated as the Upjohn Chemical Company in North Haven, where the Council has been involved since August of 1979.

The ability to get answers and a one stop information center helps relieve the frustrations of many citizens unfamiliar with the bureaucratic process. Our requests have been answered promptly by the state agencies, helping to get the correct information out as soon as possible. Individuals, groups, and state wide organizations all take advantage to the service.

The Council has also made an effort to reach more of the public. Council members participate in a number of radio talk shows throughout the state. The formats range from half-hour discussions to three-hour phone in questions and answer programs.

Council members have also been guest speakers on college campuses and at meetings of various organizations. The Council on Environmental Quality has also made attempts to reach the public in other areas. The office has put together a slide show entitled "How a Bill Becomes Law". This has been shown to school groups as well as civic clubs. The Council on Environmental Quality has also produced two publications intended to make citizen participation in environmental problems easier. The first was a "Citizen Guide to the Permit Process" which detailed the regulatory responsibilities of the Department of Environmental Protection. The second item was an "Environmental Phone Guide". This was published to give a one page listing of all the necessary Department of Environmental Protection numbers. Other state agencies and related groups that could be of assistance were also listed.

Many of the areas that are discussed in the Annual Report and the recommendations made are a direct result of citizen input. It is felt that the work done by the Council on Environmental Quality as an ombudsman is the greatest benefit to the state's citizens. The Council can be used as a sounding board for problems, a place to bring people and the state agencies together, or a meeting place for future policy discussions. The Council on Environmental Quality has the responsibility for bringing out the opinions made known to it by interested citizens. This is done through its participation on various committees and by its attendance at conferences and seminars. With two of the states major issues being air pollution and hazardous materials, the Council on Environmental Quality continues to serve on the State Implementation Plan Revision Advisory Committee and is active with the Connecticut Environmental Caucus, and has input to other environmental groups.

The Council on Environmental Quality consists of nine citizen members, five appointed by the Governor and four by the leaders of the General Assembly. Perhaps the best way to describe CEQ's purely advisory role is to say it is both "ombudsman" and "watchful state entity" for environmental protection concerns. As set forth in the Connecticut General Statutes, the Council's specific responsibilities include:

1. The investigation of citizen complaints on environmental matters brought to its attention (Section 22a-13);
2. The review of all environmental impact statements prepared under the Connecticut Environmental Policy Act for state agency construction projects (Section 22a-1d);
3. The review of state agency construction plans, especially those plans which involve "the paving or building upon of land not previously paved on or built upon" (Section 22a-12);
4. The review of applications for electric generating, transmission and cable TV facilities submitted to the Connecticut Siting Council (Section 16(50j(g)));
5. The review of applications for the siting of hazardous waste disposal facilities submitted to the Connecticut Siting Council (Section 22a-119(e)); and
6. Preparation of an annual report on the state's environmental quality, to be forwarded to the Governor and the General Assembly (Section 22a-12).

Introduction

This report of the Council on Environmental Quality covers 1982 and 1983. In these two years we have seen a shift in the environmental agenda. Air and water regulations have become familiar topics in the past years. Hazardous waste management is an increasingly important program and should continue to receive increased attention and funding.

Additionally attempts are being made to strengthen the state's Farmland Preservation program. The concern with non-game species contributes another means of enhancing our environment.

New legislation is being passed to address many environmental concerns. These programs will be reviewed as they become operational in 1984.

Two other topics have been on the public agenda and are receiving more attention. One is the old problem of solid waste. With a crisis anticipated in 1982, the state is again taking steps to solve this age-old concern. Secondly, the concern of "acid rain" has been voiced locally and internationally. Studies are a constant reminder of our concern and the Federal government is trying to reach an acceptable solution.

We have included an appendix section on the National Environmental Policy Act. This section discusses Environmental Impact Statements' timing. This is also becoming a concern in Connecticut. As projects get reviewed we have to be concerned with the timeliness of discussions as well as data.

While economic constraints may hinder the effective operations of environmental agencies, the public support is still visible. People are being more vocal about these concerns and are becoming better educated also. Newspapers are giving the environment better coverage and more articles, stories, and editorial comments are appearing.

HAZARDOUS MATERIALS AND SOLID WASTES

section 1: Solid Waste

The responsibility for solid waste management in Connecticut rests primarily with the state's municipalities, as provided for in Section 19-524n of the Connecticut General Statutes. Landfill disposal area and operating practices, however, are regulated on both the state and federal level. Federal regulation exists under the Resource Conservation and Recovery Act of 1976; state regulation of solid waste planning, facility permit review, and enforcement exists under the state's Solid Waste Management Services Act (Chapter 361a).

Connecticut's Solid Waste Management Services Act (Chapter 361b) establishes the Connecticut Resources Recovery Authority (CRRA), and sets forth the state's basic policy and goals regarding waste disposal and resource recovery. The Act also authorizes the establishment of the Connecticut Solid Waste Management Advisory Council, which is advisory to CRRA.

The State Department of Environmental Protection is the planning and enforcement agency of the state. The DEP is a public agency, responsible to the three branches of Connecticut government and to the citizens of the state.

The Connecticut Resource Recovery Authority is a quasi-public agency; independent of the three branches of Connecticut government and not directly responsible to the citizens of the state. The CRRA does not have the power to require municipal participation in any CRRA project. The primary purpose of the CRRA is to implement the state's solid waste management plan. It has been charged with promoting the development of resource recovery projects.

Connecticut Resource Recovery Authority projects are capitalized through revenue bonds issued by the Authority. Bonds are paid through user fees and revenues derived from the sale of recovered products. Each project must be found capable of self-sufficiency before any borrowing may be initiated; i.e. there must be sufficient municipal participation to cover the construction and operational costs of any resource recovery facility before funds can be borrowed.

Section 19-524e of the Connecticut General Statutes provides for a special capital reserve fund for CRRA projects. The bond trustee is permitted to withdraw from the reserve fund an amount to meet debt service when debt service payment is not

made. According to the Bond Resolution (Section 511) and pursuant to Section 19-524ee of the Connecticut General Statutes, the special capital reserve fund for CRRA must be restored by the state's general fund. Such state funding does not require legislative approval.

The Solid Waste Management Unit of the DEP is responsible for overseeing all aspects of processing and disposal of solid waste in order to minimize environmental problems, prevent health hazards and nuisances, maximize resource recovery. This includes planning for long-term disposal needs at both the state and local levels; reviewing engineering plans and specifications for landfill and volume reduction facilities in conjunction with the issuance of permits, and administering an on-going grants-in-aid program.

The Unit produced the most recent formal revision of the State Solid Waste Management Plan in early 1981. It was adopted by Governor O'Neill on March 5, 1981 and approved by the federal Environmental Protection Agency, as is directed by federal law, on March 10, 1982. For several years the department has been trying to obtain actual construction of the physical facilities required to realize waste management operations as needed by the state and as envisioned in the plan.

The Unit's technical assistance group is available to aid cities and towns with solid waste management. Activities include helping applicants through the permit process and solving technical problems at facilities. During the past year, 30 site surveys were performed, and more than 40 sets of plans for landfills, transfer stations, source separation projects and resource recovery facilities were reviewed. This preliminary work led to the issuance of 14 permits for waste transfer stations and for the operation, expansion or closure of existing landfills. No new land disposal sites were permitted in Fiscal Year 1982.

With the Unit's technical and financial assistance, a small regional resource recovery facility serving eight communities was put into operation and handled more than 100 tons of solid waste daily. In addition, the facility was able to supply steam to a local industry, reducing that company's consumption of fuel oil by 20,000 barrels per year.

During Fiscal Year 1982, 11 towns and cities have received grants totalling nearly one million dollars through the Unit's grant-in-aid program. The grants section is also responsible for the office paper recycling program in state office buildings.

Over 300 ground water monitoring points were sampled at or near landfills this year. The responsibility for monitoring 43 landfills was turned over to the landfill owners due to federal

grant cuts in the solid waste management budget. Several training sessions on the use of monitoring equipment were held.

The Unit's enforcement staff conducts routine inspection of the state's disposal facilities in order to ensure proper operation. Approximately 1,100 inspections were carried out during the past year, resulting in the issuance of 16 orders and 34 notices of violation. Although the orders and notices led to improved conditions at many sites, it was necessary to conduct 12 hearings and court actions to obtain compliance with statutes and regulations. The Open Dump Inventory, a requirement of the federal Resource Conservation and Recovery Act of 1976, continued and a total of 20 sites were inventoried through last year. A survey of all active mixed waste and bulky waste sites was completed last Fall, and the process of certifying and recertifying the more than 300 disposal area operators in the state is ongoing.

In Connecticut the average person generates 0.7 tons of waste per year, or approximately four pounds per day. The DEP estimates that the total municipal solid waste generated by the state's residents and industry is equal to about 2.5 million tons each year. And, federal EPA estimates show that solid waste generation will continue to increase by a small percentage in coming years.

The state's solid waste is disposed of at 143 active landfill sites. Even though the critical landfill shortage predicted for 1983 has been postponed through various means, the Solid Waste Management Unit of the DEP estimates that the state's existing landfill sites will be exhausted by 1986.

State law mandates that each municipality provide for the disposal of all solid waste generated within its borders. Existing space for disposal on land, however, is rapidly diminishing, and many municipalities which once depended upon their own dump sites are now transporting and disposing of their wastes at large regional landfills. Currently, 70 of the state's 169 townships are exporting their wastes to locations outside of their borders. DEP estimates reveal that the remaining towns will find themselves with no more disposal room at the same time that the state's regional landfill sites reach capacity in 1986. The disposal of solid waste, then is no longer solely a municipal problem; it is a statewide problem.

Connecticut's climate and geology are two factors which make the location of environmentally sound landfill space difficult. High rainfall, compounded by thin rocky soils with poor drainage qualities, creates a situation where the resulting leachate is not sufficiently diluted before it enters ground or surface waters. An illegally placed landfill can result in a health hazard by contaminating a water source. Yet, local

opposition often has made the selection of individual landfill sites difficult even in areas deemed environmentally acceptable by the DEP.

A legislative finding of the Solid Waste Management Services Act (Chapter 361b) states in part: "prevailing solid waste disposal practices-- landfills and incinerators-- generally, throughout the state, result in unnecessary environmental damage, waste valuable land and other resources, and constitute a continuing hazard to the health and welfare of the people of the state."

In fulfillment of a 1979 Legislative Program Review and Investigations Committee recommendation, a comprehensive landfill siting policy has been developed. The purpose of the policy is threefold: 1) to standardize and make clear the identification of suitable areas for solid waste disposal, 2) to allow for solid waste disposal, and 3) to protect the water and other natural resources of the state. There are only limited areas of the state where certain soil and hydrogeological conditions exist which may allow for the disposal of solid wastes with minimal environmental and socio-economic effects.

In an effort to delay the landfill crisis, many existing sites have received horizontal or vertical permitted extensions. Public Act 78-67 requires that a "reasonable alternative facility" must be found before closing a landfill site. While these measures can temporarily help put off a crisis, P.A. 78-67 has caused some additional problems.

The state is charged with finding alternative disposal sites while the locality has the right to regulate land usage through zoning. The question has arisen as to what a "reasonable alternative" is. If the state proposed an alternative site within a town, and the town chose to prevent a landfill through zoning, could the site be closed? Should higher cost to residents be sufficient to consider an alternative "unreasonable"? Without clarification or change, P.A. 78-67 may be allowing unsafe, environmentally harmful sites to remain in operation while alternative sites are found. The situation seems to directly contradict the intent of the Resource Conservation and Recovery Act which calls for the closing of unsafe landfills which fail to meet certain standards.

In order to address the problems of increasing waste generation and decreasing landfill capacity, the state's solid waste management plan covers four areas: source reduction, source separation, waste processing and disposal.

A. Source Reduction and Source Separation

Source reduction involves reducing the amount of waste generated. Connecticut's Bottle Bill aids source reduction by reducing the amount of bottles and cans which are discarded by

state residents.

Another method of removing items from the waste stream is through source separation. This involves dividing materials into useful categories before collection. Aside from reducing the amount of waste to be processed, recycling of useful materials (like cans, glass and newsprint) obtained through separation saves valuable resources.

There is, however, no state-wide program through which source separation activities can be coordinated. Although the DEP provides technical assistance to municipalities, implementation of any source separation program is done solely at the local level. State legislation does not exist concerning source separation even though many people feel source separation and recycling are an integral part of any long-term solution to solid waste management. Currently, almost 100 towns have voluntary recycling programs, and two, East Lyme and Wethersfield, have passed source separation ordinances.

Source separation benefits the local community by saving on waste transportation costs and disposal fees. Economic incentives, then, can be used to further environmental goals, but public education to increase awareness and understanding of the value of source separation is vital.

B. Resource Recovery

Waste processing involves two strategies: reducing volume of solid waste to be disposed of and resource recovery of energy and materials. Processing one ton of refuse results in heat production equivalent to that of one barrel of oil while preserving valuable landfill space.

These benefits plus the diminishing of environmental degradation have made the development of resource recovery facilities the major priority in the state's attempt to solve solid waste problems.

In 1973, General Electric prepared a report for the state with the estimate that ten resource recovery plants would be handling 84 percent of the state's solid waste by 1985. Development of such facilities has been hampered in various ways, some of which have been outlined in a December 1982 report issued by the Environmental Quality Division of the state DEP.

With the realization that waste management is a statewide problem, the state legislature acted in 1973 to establish the Connecticut Resource Recovery Authority (CRRA). The CRRA is charged with the establishment, management and operation of solid waste disposal and resource recovery systems.

The CRRA is currently under contract with several Connecticut communities to manage their solid waste. During the initial

years of its existence, CRRRA sponsored a resource recovery facility for the Bridgeport area. The basic concept of the facility was the conversion of solid waste into synthetic fuel which could be used by an area utility. The Bridgeport facility was dedicated in October 1978 and became operational in February 1979. It was shut down October 1980, and has not operated since.

The Bridgeport resource recovery facility is designed to process approximately 1,800 tons per day of mixed municipal solid waste while producing a dust refuse derived fuel (RDF).

RDF is a fine powder which can be mixed with oil or coal. The RDF which was produced at the Bridgeport facility is called ECO-FUEL II, a registered trademark of Combustion Equipment Associates. In 1979, prior to shut-down of the Bridgeport facility, the state Legislative Program Review and Investigations Committee concluded in part that "...there has been insufficient testing and commercial production and burning of the ECO-FUEL process. Therefore, to dissipate the technical risk associated with resource recovery development, the Committee recommends that the Authority's (CRRRA) future projects not utilize a process based upon the production of dust refuse derived fuel until the Bridgeport facility operating record is strong or until there is evidence of success in similar RDF plants."

The Bridgeport resource recovery facility is inoperable at the present time for two reasons. First, it is physically inoperable. There are several estimates that have been offered quoting a price of several million dollars necessary to bring the facility on-line, but as a substantially reduced level from the original design. During an unusually long shake down period of more than a year, the facility achieved a maximum rate of 30-35 tons per hour while operating at approximately 25 tons per hour for any sustained time period, as 30-32 hours. Such a performance record represents an operational level at 50 percent of design capacity.

A second problem inherent in the Bridgeport facility is the fact that the participants in the project, CRRRA and Occidental Petroleum Corporation, are involved in arbitration. CRRRA signed a contract with a firm that was a joint venture between Combustion Equipment Associates and the Occidental Petroleum Corporation for that joint-venture firm to design, construct and operate the Bridgeport facility through November 1999. Combustion Equipment Associates, however, filed for bankruptcy under Chapter 11 in October 1980. The bankruptcy action brought all work at the facility to a halt. According to CRRRA officials, Occidental's greatest concern was its assumption of risk and the need to limit the company's liability. CRRRA's position has been that it is willing to entertain any technical or economic

burden to the contracted municipalities or to the state.

In July 1982 Occidental advised CRRA that it had done all it could to get the Bridgeport project on-line and that it would no longer expend effort or continue interim service of solid waste management for the contracted municipalities.

Occidental has filed an arbitration against CRRA seeking a determination that: 1) it is not obligated under the construction contract, and 2) it is entitled to reimbursement for funds expended on behalf of the project. CRRA has applied for a determination that would ensure Occidental's contract obligations, i.e. delivery of interim service and continued work on the Bridgeport facility.

The state of Connecticut is not directly involved in the arbitration. The Bridgeport facility, however, is financed by Series A bonds issued by the CRRA in September 1976 in the amount of \$53 million. Section 524ee of the state statutes authorizes CRRA to create and maintain the special capital reserve fund, and in the case of the Bridgeport facility, \$5,022,588 of the bond proceeds was assigned to this special capital reserve fund. The reserve fund is equal to the maximum amount of debt service payable in any given year and it is maintained for the term of the bond issue. If at any time debt service payment is not made on the bonds, the bond trustee may withdraw from the special reserve fund the amount required to meet the debt service payment.

According to the Bond Resolution (Section 511) and pursuant to Section 524ee of the state's statutes, the special reserve fund must be replenished by Connecticut's general fund, and any such action does not require legislative approval.

Occidental failed to make a debt service payment of approximately \$2.3 million on November 15, 1982, and CRRA made payment utilizing withheld construction funds. There is approximately \$3.9 million in withheld construction funds remaining, which with an expected annual rate increase of eight percent should accrue to approximately \$4.3 million.

The total payment due on the bonds for 1983 is about \$4.6 million including May interest payment and a November interest-plus principal payment. The 1983 payments due exceed the amount of withheld construction funds and potential interest on those funds by approximately \$300,000. In the event that Occidental continues to fail to make debt service payments, the \$300,000 shortfall will have to come from the special capital reserve fund. The state of Connecticut's first economic involvement in the CRRA-sponsored Bridgeport facility should begin in December 1983 when the special capital reserve fund might have to be reimbursed with state general fund monies.

In May 1984 another interest payment of \$1.5 million is due, for which the state could be liable, and such economic exposure could continue if the arbitration is not resolved and/or Occidental continues to fail to make debt service payments. It has been noted by those involved that the arbitration could last five years or more.

As was noted in the December 1982 report issued by the DEP, "In the sale of the Series A bonds the (special capital reserve fund) provided a state commitment for the security of the debt service payments. It has been continuously stated by CRRA that the state of Connecticut has not put any funds into the Bridgeport facility. This is true for the present, however, it is very misleading. By May of 1984, the state of Connecticut may have already been exposed to an economic burden of approximately \$1.8 million."

At the present time, CRRA as owner of the Bridgeport facility is proceeding with a request for a proposal for the redevelopment of the facility even in the face of arbitration with Occidental. It is felt by the DEP that this and any subsequent action on the part of CRRA could result in a determination that it has not honored the existing contract, and that such a determination could put the state in a position of further economic exposure.

As mentioned, the Division of Environmental Quality of the Department of Environmental Protection issued a report in December 1982 which covered the problems of solid waste management in Connecticut offered some recommendations which the DEP would like to see implemented through the state's legislative and regulatory process in the 1983 session of the General Assembly.

DEP personnel held public hearings and accepted written opinions on solid waste. The opinions expressed by people throughout the state as well as those of DEP staff are outlined in the December 1982 report to the governor. Findings included the facts that a poor credibility status exists for the CRRA with local chief executive officers and the general public. CRRA also suffers from poor accountability and communication problems. Local chief executives are beginning to sense the seriousness and magnitude of the problem of managing the state's solid waste, and local leaders feel the problem is a state-wide one which should be dealt with through a state-local partnership. Also local leaders feel, according to the DEP, a high degree of disappointment regarding the Bridgeport facility.

The DEP has recommended that CRRA be reconstituted and a greater role in its operation should be given to the DEP. Many local executive officers who have testified at hearings indicate they have little faith in CRRA and they also would like to see the DEP play a stronger role. If the chairman of the

CRRA were the DEP Commissioner or his designee, several purposes would be served: CRRA's credibility status would be strengthened, as would is accountability; necessary communication between the DEP and CRRA would be improved; and, the role of the DEP and thereby the state's role in resource recovery would be strengthened.

As mentioned, the CRRA is a quasi-public agency, independent of the three branches of Connecticut government, whereas the DEP is a state agency accountable to all three branches. DEP staff feels this situation is partially responsible for a communication gap between the two agencies -- one a planning and enforcement agency (DEP), the other the implementation agency (CRRA). To illustrate, a consultant was hired by Combustion Engineering to undertake a study to determine what DEP permits and local permits and approvals were needed for a central Connecticut resource recovery project. Had the CRRA approached DEP on behalf of Combustion Engineering, that portion of the consulting fee associated with DEP permits would have been unnecessary. Also, local municipalities very often communicate with either the DEP or CRRA, but not both, which widens the communication gap.

Since the responsibility for solid waste management rests primarily with the municipalities of the state, their representation as directors of CRRA should be maintained with the inclusion of some voice and input from large cities like Hartford, Bridgeport and New Haven. However, some directorial changes should be made with the result of seven directors; the DEP Commissioner and six others appointed by the governor. The directors should include: the Secretary of the Office of Policy and Management, the Commissioner of Economic Development, one chief executive officer from a municipality of more than 100,000 population, one chief executive officer from a municipality of fewer than 100,000, and two public members with municipal or corporate financial expertise.

Evaluation of CRRA job descriptions, responsibilities, salaries and benefits, and operating procedures should take place, and a DEP Advisory Council to replace that provided for in Section 19-524ii of the state statutes should be created.

Finally, DEP staff and local officials realize that solid waste management will be expensive, but local officials are willing to accept some responsibility for waste management, as long as the currently non-existent but imperative state guidance and direction are made available.

Whereas participation in CRRA projects has been voluntary, many feel the only route for the state to follow is to mandate participation in resource recovery facilities. Whether state economic incentives are provided through a grant-in-aid program or through a partial reimbursement of tipping fees, as has been

suggested by the governor, all seem to agree that some state financial assistance will have to be made available, along with state direction and guidance and perhaps legislative mandating of local participation.

In the construction grants program for sewage treatment facilities, the state has assumed a substantial portion of the economic responsibility. Maximum resource recovery from solid waste is necessary for the preservation, enhancement and protection of the state's environment, and is necessary for the public benefit. Solid waste management projects should be implemented, then, on a regional basis, with designated waste sheds wherein the DEP directs how municipalities shall manage wastes, and designates location of resource recovery facilities. Participation can no longer be voluntary, and the state will have to assume some of the economic burden to solve a problem that is now critical.

section 2: Oil & Chemical Spill Unit

The Oil and Chemical Spill section of the Hazardous Materials Management Unit was originally established in 1972 as part of the Water Compliance Unit. It was a one person operation that dealt with reported oil spills. In 1978, it became part of the newly formed Hazardous Materials Management Unit of the Department of Environmental Protection. This section expanded to a six member team, the Emergency Response Team, that handles reported oil and chemical spills.

The Oil and Chemical Spill's Emergency Response Team main function is to be available to answer calls of emergency situations. The team is on call 24 hours a day, 365 days a year through cooperation with the Connecticut State Police. During regular hours, reports are taken in their office. After hours the State Police can be called, and they will be able to reach a member of the Emergency Response Team.

Each team member has equipment to begin and/or assist in spill containment if necessary. Every individual carries plugging kits, 50 feet of oil containment boom, sorbent materials, air packs, and a gas suit in his vehicle. The responding team member acts under the local fire chief or official in charge depending on the site of the spill, in an advisory capacity. The section monitors the entire cleanup operation to insure that DEP regulations are followed. It also instructs the party responsible for the spill to take over the cleanup operation or calls in a licensed contractor to do so.

It is also the responsibility of the Oil and Chemical Spill section to charge the pollutor to pay for the cleanup process and any damage that might have been caused by the spill. Connecticut Statutes, Section 22a-454, states that "Any person, firm, or corporation which directly or indirectly causes pollution and contamination of any land or waters of the state or causes an emergency through discharge, spilling, uncontrolled loss, seepage, or filtration of oil or petroleum, be liable for all costs and expenses incurred in containing and removing or otherwise mitigating such pollution and contamination or emergency." In the incident of a "Mystery Spill" such as a case of midnight dumping the section appropriates funds from the state or federal government to pay for the cleanup operation.

Types of incidents the Oil and Chemical Spill section handles include any type of chemical leadeage, seepage or spillage. The most common incidents are inground tank leaks, and tank truck rollovers. The team has responded to tankship sinkings, overfills in tank farms, and chemical fires. As state waters extend into Long Island Sound, the section also deals with oil spills in this area.

The Oil and Chemical Spill Response Team has also been working with the Water Compliance Unit. The aim is to control leakage from in-ground storage tanks in order to avoid contamination of groundwater sources.

This Section of the Hazardous Materials Management Unit also licences chemical and oil spill cleanup contractors and haulers.

The Connecticut State hazardous waste "superfund" was established in 1982. The fund is designed to be used to quickly clean up waste spill, provide drinking water, and pay for state inspection when the resposible party can't be found or has no assets. The money in the fund comes from state taxes on industries that produce hazardous waste. However, the state has only half the funds it expected to have by now. With a tight budget, funds are harder to get at. This slows the whole cleanup process by the Emergency Response Team. It should be noted that one large chemical spill could wipe out the superfund, thus funds have to be foud somewhere for this purpose.

It is noted that there is an increasing number of reported incidents. This is attributed to increased public awareness and a 24 hour phone number plus greater adherence to reporting regulations. However the actual number of excessive spills and damage is decreasing due to early reporting, quick response and efficient control of spills.

The total number of incidents handled by the Oil and Chemical Emergency Response Team has increased from 600 in 1977-78 to 1,326 in 1981-82. The same six-man team is handling twice the work load it did in 1978. It is recommended that there is a need of more positions to be filled for clerical assistance in handling information requested by government agencies and the public. A recommendation for increased manpower on the Emergency Response Team is made as a 24 hour a day operation is alot for six men to handle with an increasing workload.

AIR QUALITY

section 1: Acid Rain

An interagency federal task force on acid rain precipitation announced its findings in June of this year that acid rain is damaging lakes and streams in the Northeast, and the task force linked the problem to man-made pollution.

The findings, released in a report to Congress and the president, indicated that more research is needed on the causes and effects of acid rain, but evidence was cited which linked power plant emissions with acid rain.

One result of the June 1983 federal report is that Congress is expected to again consider whether to require major pollution cleanups at coal-burning power plants in an effort to curb acid rain. The Senate Environment and Public Works Committee had in the 1982 session approved cleanup requirements that would fall most heavily on utilities in the industrial Midwest. That legislation, however, did not clear Congress.

The federal report indicates great consensus that acid rain is damaging to aquatic life. There is apparently less evidence that acid rain is damaging crops, trees and buildings. The federal task force confirmed that man-made sources of pollution, like sulfur dioxide, are the "primary contributors" to acid rain in the Northeast. Administration researchers, however, have not been able to establish how much of the acid rain in the Northeast is caused by power plants in the Midwest.

Rain in Connecticut and the Northeast is generally more acid than that found in other areas of the United States. Opinions regarding the danger posed by acid rain range from no danger at all to perception of dying fish and vegetation, corroding statues, crumbling buildings, and threats to human health.

Because of such concerns, the Connecticut General Assembly created an Acid Rain Task Force charged with studying the sources and effects of acid rain in Connecticut by working with the Connecticut Agricultural Experiment Station. The task force was also required to submit a final report on its findings to the governor and the General Assembly by January 1, 1983.

The task force examined the effects of acid rain on soil and water, the effects on fish, effects on vegetation, on

structures and the effects on human health. Undertaking research was beyond the charge of the group, and as significant disagreement exists between advocates on opposing sides of the acid rain issue, the task force sought out informed opinion and released a final report indicating where consensus could be reached and also where further investigation is required.

Acid rain is produced by reaction of moisture with oxides of carbon, sulfur and nitrogen in the atmosphere to produce a mixture of carbonic, sulfuric and nitric acids. The principal oxide of carbon is carbon dioxide, or CO_2 , which is present in normal air at a relatively constant concentration of about 0.03%. Reaction of CO_2 with moisture then produces "normal" rain with a pH of about 5.6. Rain with a pH of lower than 5.6 is considered to have been acidified.

The principal oxide of sulfur is sulfur dioxide, or SO_2 , which is produced by biological oxidation of sulfur-containing compounds and by the combination of fossil fuels. On a world-wide basis, natural production of SO_2 far exceeds man-made sources, yet in industrial nations, sulfur oxides generated by man often far exceed natural production of SO_2 . When coal and wood were major fuels, much of the acidity produced by combustion was neutralized by smoke and fly ash. Although early studies of the acid content of rain are sparse, it is reasonable to conclude, says the Task Force, that tall smokestacks and particle precipitators converted local soot problems into regional acid rain sometime after World War II.

The oxides of nitrogen in air are complex and usually referred to as NO_x . The principal source of nitrogen oxides is high temperature combustion where nitrogen and oxygen naturally present in the air combine to form NO_x . As with SO_2 , natural emissions of NO_x on a global basis far exceed man's contributions, but automobiles and other combustion processes overwhelm these sources in industrial areas. At the present time, sulfur oxides in the air generally exceed nitrogen oxides, but increased emissions of NO_x are expected, says the report, to increase the nitric acid component in rain.

Acid rain, then, is a mixture of acids dissolved in water, reactive gaseous oxides and fine particulate sulfate (produced when a portion of the sulfur compounds in air oxidize to sulfate -- SO_4 = -- and react with other materials), and nitrate aerosols.

In addition, air contains other pollutants like ozone, hydrocarbons and heavy metals which may interact in synergistic fashion with various components in acid rain. Consequently, acid rain must be considered as only part of the larger problem of air pollution in Connecticut.

Although New England lies generally downwind from sources

of air pollutants to the west, it is difficult to determine the relative amounts of any particular pollutant transported into Connecticut in comparison with the amounts generated within our borders.

Continued monitoring of ozone levels (produced by the reaction of sunlight with hydrocarbons and NO_x precursors in the atmosphere) in Connecticut has shown high concentrations in summer months. It has been estimated that transport of ozone from the New York-New Jersey urban complex can account for up to 70% of concentrations measured in Connecticut on certain days in the summer.

Even though Connecticut ozone levels are among the highest in the country, precise source areas cannot be specified. The long-range nature of ozone transport, however, suggests additional source areas exist outside of the New York-New Jersey metropolitan area. Although there have been significant decreases in amounts of most other air pollutants in Connecticut during the past seven years, ozone levels have remained fairly high.

Unlike ozones, concentrations of sulfur dioxide tend to be higher in the winter, presumably due to increased burning of fuel. Measurements of SO_2 during persistent southwest winds indicate that 15-57% of "typical" daily SO_2 levels in Connecticut can be attributed to transport from the New York-New Jersey metropolitan area.

The attainment of SO_2 standards for Connecticut is attributed to restrictions on sulfur content of fuels.

Nitrogen dioxide concentrations in the air, measured by the Department of Environmental Protection since 1973, has declined somewhat. About 60% of the NO_2 in Connecticut is estimated to come from automobiles.

As for acid rain, a clear association has been found between the sulfuric acid component of acid rain and emissions of sulfur dioxide. Therefore, says the Task Force report, regions upwind of Connecticut where emissions of sulfur dioxide are high are undoubtedly contributing to the acidity of the state's rain.

Data shows the region of the country with the most highly acidified rain lies considerably to the west of Connecticut. Data also shows that the concentrations of NO_3 and SO_4 in rain were also greater west of Connecticut during 1978-79.

The U. S. Geological Survey has monitored rainfall in New York state since 1964. That monitoring shows that the average sulfate concentration in rain has decreased steadily at about

two percent per year with the largest decreases up to five percent per year at stations in Albany and on Long Island. Nitrate concentrations have increased 6-12% per year, while hydrogen ion concentrations increased in the western part of New York and decreased in the eastern portion of the state. These observations, says the Task Force, coupled with a decrease in SO₂ and NO_x concentrations in Connecticut's air, run counter to the opinion held by some that acid rain is steadily worsening in the state.

Conclusions reached by the Connecticut Task Force on Acid Rain include the following:

There is little doubt that rain in Connecticut and elsewhere in the U.S. has been acidified by increased emissions of sulfur dioxide and nitrogen oxides. The increased emissions of sulfur dioxide can be attributed largely to increased combustion, regardless of the composition of the fuel, and the observed increases can be attributed largely to automobiles as well as stationary combustion sources.

The sources of acid rain and other air pollutants in Connecticut are not readily quantified. This is due in part to the varied components of acid rain; if damage is caused largely by gaseous SO₂, for example, its relatively short residence time in the atmosphere suggests that local sources are important.

Rain in Connecticut has an average pH of about 4.3-4.4, which is highly acidic compared to unpolluted rain with a pH of 5.6. The area of most highly acidified rain lies to the west of Connecticut, covering the general area of western Pennsylvania, western New York, eastern Ohio, and southeastern Ontario. Measurements of sulfate and nitrate deposition confirm that this area is the center of acid deposition. Because large amounts of sulfur dioxide and nitrogen oxides are produced in the 28 states east of the Mississippi River, it is reasonable to conclude that man has fouled his own nest.

To date, the effects of acid rain on the environment of Connecticut can be summarized as subtle. The soils of the state are generally well buffered and show no evidence of acidification by acid rain. Measurements of the alkalinity of 35 lakes in Connecticut show little or no change since earlier measurements taken in 1937-1939. Similarly, there is no evidence that fish in our lakes have been affected by acid rain, but there are 1,000 lakes in the state that are large enough to have names, and some changes may have gone undetected. There is no evidence of damage to agricultural crops, and little or no reason to believe that Connecticut's forests have been adversely affected to date. However, concern has been expressed that current levels of air pollution may cause genetic, biological and ecosystem changes that have yet to be identified.

The effects of acid rain on structures in Connecticut are evident in the weathering of some statues and other building stone. The damage is caused largely by the sorption of gaseous oxides, particularly sulfur dioxide, which then dissolves in dew or other moisture to produce sulfuric acid.

There is little evidence of any direct effect of acid rain, or the increased acidity of rainfall, on human health. The notion that acid rain will burn skin or dissolve one's clothing has no basis in fact. However, there is no question that some forms of air pollution are harmful to health. Specifically, fine particulate aerosols can lodge in the lung and cause respiratory problems.

The Task Force report stresses that there is a "serious need" for increased public understanding of the sources and effects of acid rain in Connecticut. The Task Force has recommended that the Department of Environmental Protection, the Department of Health Services and other appropriate agencies undertake educational programs that will inform the public of the facts concerning acid rain.

The Task Force recommends that 1) methods for monitoring total suspended particulates should be improved so that sulfates and particle size can be measured, 2) monitoring of pH of rainfall should be expanded to include pH of rivers and streams, particularly during spring runoff into head water streams, and special attention should be given to sensitive areas as salmon spawning and stocking locations, 3) studies of lakes should focus on those in highly forested watersheds where acidification seems most likely, 4) monitoring of sulfur dioxide should continue to determine if recent changes in allowable sulfur contents of fuel have resulted in changes in concentrations of sulfur dioxide in the air, and 5) transport models should be developed with sufficient accuracy to predict movement of air pollution so that effects of regulatory changes can be determined.

Also, significant amounts of sulfur oxides are produced in Connecticut by burning of fossil fuels and significant amounts of nitrogen oxides are produced in Connecticut from automobiles. Changes in current regulations on sulfur content of fuel or in emissions from automobiles should be carefully evaluated in terms of effects that may be expected.

Finally, the Task Force recommends that the state General Assembly petition Congress to strengthen the Clean Air Act with particular reference to regulation of particle size of total suspended particulates, and to address the problem of regional transport of pollutants into Connecticut.

section 2: Emmissions Program

The National Clean Air Act as amended in 1977 states that any area violating federal air standards for photochemical oxides (ozone) after 1982 must control that pollution through an automobile emissions inspection program. Five states, including Connecticut, have been given an extension until 1987 to reduce air pollution by 30 percent.

In 29 states, including Connecticut, air pollution levels exceed those allowed under the Federal Clean Air Act. In some nearby northeastern states, however, auto emissions programs have been in effect for some time. New Jersey has had an auto emissions program since 1974; Rhode Island since 1979; and, New York City area has had a program since 1982. Massachusetts will be implementing a program in 1983.

In March, 1978, the Connecticut General Assembly passed Public Act 78-335 requiring the Motor Vehicle Department commissioner to establish an emissions inspection program. Legislation, (Public Act 79-238), making technical changes and providing a one-year delay in implementation of the program was passed in 1979. During the 1980 General Assembly session, Public Act 80-458 was passed enabling implementation of an annual motor vehicle emissions inspection program.

The program was given to the Motor Vehicle Department who issued a Request for Proposal on August 1, 1980 to have the program established. Hamilton Test Systems, a subsidiary of United Technologies, was the private and only contractor to submit its proposal on October 2, 1980. An evaluation of the proposal was compiled and the Motor Vehicle Department entered into negotiations with the contractor in November, 1980. A contract was signed between Hamilton Test Systems and the Motor Vehicle Department in December, 1980.

The Connecticut General Statutes 14-164b through 14-164g, required any contract negotiated by the Connecticut Department of Motor Vehicles to be submitted to the Legislative Review Committee on or before January, 1981. The contract between the Hamilton Test Systems and the State became effective on February 24, 1981.

While some of Connecticut's air pollution is attributable to other states, research and testing by the Connecticut Department of Environmental Protection indicates that the state generates enough ozone air pollution of its own to violate federal air quality standards. There are more than 1.7 million cars in Connecticut. Automobiles produce more than 90 percent of the carbon monoxide and more than 50 percent of the hydrocarbon in Connecticut's environment.

For that reason, Connecticut's motor vehicle emissions inspection program began on December 31, 1982. With certain exceptions, every registered gasoline-powered vehicle weighing less than 10,000 pounds will be tested for excessive hydrocarbons and carbon monoxide. Vehicles excluded from the program include motorcycles, farm vehicles, off-road equipment, diesel vehicles and cars manufactured before 1968. Approximately 1.6 million vehicles are expected to be tested annually at a fee that, by state law, shall not exceed \$10.00.

Even with auto makers continually improving vehicle performance, many cars only a few months out of the showroom are not functioning properly because they have not been kept in tune and properly maintained. An emission inspection and maintenance program is the easiest way to isolate these offending cars and to correct each vehicle's specific problem.

The two most common problems causing pollution are excessive hydrocarbon and carbon monoxide levels. Hydrocarbons are nothing more than unburned fuel and an excessive reading means the vehicle is not using gasoline efficiently. When combined with other pollutants in the atmosphere, hydrocarbons create photochemical "smog". Too much carbon monoxide indicates problems in the air-fuel mixture within a carburetor.

Diesel-powered vehicles, which are exempt from Connecticut's auto emission testing program, emit low levels of carbon monoxide and reactive hydrocarbons, a precursor of ozone.

Ozone and carbon monoxide pollution constitute serious health hazards the citizens of Connecticut cannot afford to ignore. Ozone air pollution can increase susceptibility to infectious diseases and can impair lung function by changing the cellular composition of the lungs. In addition, ozone is an irritant that causes coughing, chest discomfort and irritation of the mucous membranes of the nose, throat and trachea.

Carbon monoxide combines more readily than oxygen with hemoglobin; thus inhalation of carbon monoxide reduces the level can impair the functioning of body and brain tissues. Inhalation of carbon monoxide aggravates symptoms in individuals suffering from cardiovascular disease and adversely affects fetal growth and development.

Children under age 14 are especially likely to suffer the effects of air pollution because they exercise more often out doors and inhale larger volumes of air per surface unit of lung than do adults.

Those over age 65 are considered more sensitive to air pollution as a result of the reduced ability of their lungs to clear foreign particles and repair damage induced by inhalation of respiratory irritants. More than one million Connecticut residents are either under age 14 or over 65.

People suffering from chronic respiratory ailments form another group highly susceptible to air pollution. It is estimated that in Connecticut 32,000 people suffer from emphysema; 76,000 chronic bronchitis, and 45,000 from pediatric asthma.

Connecticut's automobile emission inspection/maintenance program is designed specifically to reduce level of carbon monoxide and ozone in the air we breathe. Over the past eight years, the effectiveness of auto emissions testing has been documented in several states with programs similar to that in Connecticut.

As study conducted by the Environmental Protection Agency in Portland, Oregon shows that engine adjustments in cars failing to pass state inspection reduced the vehicles' emissions by hydrocarbons by 42 percent and of carbon monoxide by 47 percent. The Portland study also established that the emissions reductions resulting from engine adjustments continued into the following year.

In Arizona, where an inspection/maintenance program has been in effect for seven years, emissions testing has been credited with sizeable reductions in pollution problems in Tucson and Phoenix metropolitan areas. The Arizona Department of Health Services has released figures indicating the program has reduced carbon monoxide levels in the air by 30 percent, a figure that closely matches measurements taken directly at the tailpipe. Arizona officials also report that failed vehicles returning for a retest show a 50 percent reduction in both carbon monoxide and hydrocarbon emissions measured at the tailpipe. In addition to clean air benefits, officials estimate the program is saving Arizona motorists approximately 30-35 million gallons of fuel a year because of better-tuned cars using gasoline more efficiently.

In California, where the vehicle inspection program has been in place since March 1979, test results after the first 18 months of operation and the inspection of nearly two million cars indicated that failed cars returning for retest emitted 46 percent less hydrocarbons and 44 percent less carbon monoxide after repairs. The average cost of repair in California was found to be \$30.00, and in most cases, only minor adjustments or repairs were needed.

United Technologies' Hamilton Test Systems subsidiary has formed a new company, CTVIP Incorporated, to operate Connecticut's motor vehicle emissions inspection program under a contract from the state Motor Vehicle Department. To accomodate the state's 1.6 million eligible vehicles, CTVIP formed an 18-station network strategically designed to provide convenience to motorists. Approximately 150 inspectors and 15 administrative personnel were employed to run the program and all underwent an intensive training course.

Before the emissions test, a vehicle is visually inspected for hazardous conditions or obvious exhaust leaks. Then a probe is placed in the vehicle's tailpipe; the engine is idled and the vehicle's hydrocarbon and carbon monoxide levels are sampled by computer.

The levels are compared to emissions specifications formulated by the state of Connecticut and programmed into the testing system. If the vehicle's emissions meet specifications, the vehicle passes the test. However, if a car fails the idle test, the vehicle is placed on a dynamometer. The vehicle is operated on the dynamometer under simulated road conditions (about 30 miles per hour). Emissions data from this test is included in the diagnostic information portion of the vehicle inspection report. Emissions are then once again teste while the car is idling. Vehicles with emissions in excess of state standards fail the test.

A car that passes will be issued a vehicle inspection report and a "pass" windshield sticker. A car that fails receives a "fail" sticker and a vehicle inspection report stating the possible cause of failure. Failed cars must be repaired and receive free reinspection within 30 days. Car owners who do not submit their vehicles for testing can be fined up to \$100.00 and face possible loss of registration under Connecticut law.

Repairs are mandatory under Connecticut law, however the state has included a repair cost ceiling of \$70.00, excluding pollution control devices, on each car. Additionally, the Motor Vehicle Department has prepared a set of standards to grant waivers to some motorists whow cars do not meet emissions standards due to unusual circumstances. In most cases, a car failing the inspection needs nothing more than a tune-up or adjustment, and national figures indicate an average repair cost of \$17-30.

Opposition to the creation of motor vehicle emissions inspection in Connecticut was evident for most of the first six months of the inspection program, and has only recently died down as the long lines at testing sites have disappeared.

Although a bill introduced in the General Assembly seeking

repeal of the program garnered support of many state legislators, it was eventually defeated. Legislative opponents of the auto emissions testing program were stopped temporarily when the House of Representatives Transportation Committee defeated their bill to repeal Connecticut's emission testing legislation by a 9-9 vote. The measure was petitioned to the floor of the House with the signatures of 82 House members opting to reconsider the proposal to outlaw the testing program. The petition, however, was ruled invalid because, said the legislative Commissioner's Office, it was filed past the deadline for reconsideration of a proposed bill.

Undeterred, legislators tried the amendment route, tacking repeal of the state's auto emissions testing program onto a bill requiring study of the state's air pollution monitoring standards. The amendment was rejected 83-62.

The federal Environmental Protection Agency has indicated auto emissions must be tested in an effort to reduce ozone pollution or states will lose certain federal monies. Estimates on just how much in federal highway and sewer funding would be denied Connecticut have ranged from \$100 to \$250 million, with the accurate figures appearing to be \$225 million in highway construction funds, \$28.5 million in sewer grants, and \$1.8 million in air pollution aid if the program were to be repealed. The Government can also withhold environmental permits or assistance from businesses that wish to relocate or build plants if there is no auto emissions testing program in operation.

Also, the state's contract with Hamilton Standard, the UTC subsidiary running the inspection program reads that the state could pay penalties of "up to \$42 million" if the five-year contract is broken. Proponents of the emissions testing generally cite \$26 million as what it would cost the state to break the contract with Hamilton Standard.

Many state residents have voiced the opinion that establishing a full-fledge program, which some state offer for less than \$10.00, would have been a better solution.

Others suggested that having inspections done more cheaply by local service stations was preferable to the state program adopted in Connecticut. Still others have noted that since only 16 percent of the vehicles tested fail to meet the state's emission standards, the other 84 percent of the driving population must spend \$10.00 to find out that their cars passed the inspection.

In Rhode Island an auto inspection program similar to the one in force in Connecticut was attempted. A class action suit filed in late December 1976, before the state's emission tests started, helped block the award of Rhode Island's inspection

contract to Hamilton Test Systems, Inc., basically the firm which handles Connecticut's emissions testing. Eventually Rhode Island adopted a cheaper inspection program administered by local service stations.

Rhode Island's original legislation passed in June 1976 and repealed in January 1977, had called for exemption of all vehicles over 8,000 pounds and mandated a system of specific controlled testing as does Connecticut's law. Connecticut's inspection program applies to vehicles weighing less than 10,000 pounds.

Much of the opposition concerning the Connecticut program died down as the long lines of waiting motorists at inspection sites declined after the program had been in operation for a few months. At the outset of the program in January 1983 many state motorists, probably unsure of just what the new law was all about, rushed to have their cars checked either when such inspection was not yet required of them, or they sat in line waiting for special exemption privileges. Administrative tasks like sufficient and clearly understandable notifications of the driving public seemed to be at fault rather than the actual administration of the vehicle tests at the inspection sites.

The effort to clean up auto emissions on a nationwide, even worldwide, basis is both desirable and necessary. All in all the program is a good idea. Even though the program still has a few problems to work out, eventually Connecticut will benefit by having clean air and not angry citizens.

WATER RELATED ACTIVITIES

section 1: Ground Water Classification System

Approximately 46 percent of Connecticut's 3,100,000 people rely on ground water rather than surface water for their water supply. A vast majority of the state's ground water is suitable for drinking without treatment, yet there are many competing demands placed upon Connecticut's ground water resources, both for water supply and for waste disposal.

Because Connecticut is highly urbanized and industrialized, its ground water quality is very susceptible to adverse impacts from landfills and improper residual disposal practices, leaking underground fuel and chemical storage tanks and other land use activities.

Seventy-eight of Connecticut's 169 towns and cities have experienced contamination of water supplies within their boundaries within the past five years. By January 1982, over 350 Connecticut wells, serving an estimated 200,000 people, were known to have been contaminated by a variety of pollution sources including indiscriminate home disposal of household chemicals and septic system additives, road salt, fuel and chemical storage, landfill leachate, accidental spillages, and toxic and hazardous waste.

Sixty-five of these wells were public water supplies; the remaining 285 were private or commercial water sources. Although half of the well problems have been solved (primarily those involving public water supplies), many of the private domestic well owners must rely upon bottled water, home filters or boiling.

It has been possible for the Department of Environmental Protection to carry out control or abatement of such ground water contamination problems under Connecticut's Clean Water Act of 1967. However until 1980 the inseparable relationship between ground and surface water was not recognized in the state's water quality policy, comprehensive planning, or standards for the uses of, or discharge to, ground waters. In fact, during its first decade, DEP water quality program efforts were oriented almost exclusively to waste water treatment as it applied to discharge to surface waters.

In September 1980, however, statewide ground water quality standards and criteria were adopted, and it was determined that a system of ground water quality standards paralleling the state's existing surface water quality program could be workable and effective. A survey was made to identify and categorize the quality of ground water sources. Each watershed was looked at

individually to assess the water's suitability for various uses. Factors considered included locations of public water supplies, proximity to point sources and the hydrogeology of the area.

All surface watersheds with drainage areas greater than one square mile, depth to bedrock, depth of till deposits, stratified drift including thickness and grain size of deposits, and depth to water table were plotted on maps at the 1:24,000 scale.

Contours of certain combinations of this data were also mapped to define areas suitable for water supply development and those potentially suited to waste disposal to the ground. All existing and planned public surface water supply reservoirs, all existing public water supply wells, all wastewater and cooling water discharges to ground and surface waters, industrial waste lagoons, landfills, all oil and chemical spills, or leaks recorded since 1976, salt piles, septage lagoons, contaminated wells and plumes were also mapped on overlays at the same scale (1:24,000).

The data was further compared with broad land use information, topography, natural and preservation areas, parklands, state-owned fish and game preserves, trout-stocked streams and existing and potential anadromous fish runs. Other statewide conservation and development plans and policies were evaluated and that appropriate data was also plotted.

The Department of Environmental Protection adopted the following policy for the state's ground waters: "It is the policy of the State to restore or maintain the quality of the ground water to a quality consistent with its use for drinking without treatment. In keeping with this policy, all ground water shall be restored, to the extent possible, to a quality consistent with Class GA (see Chart I). However, restoration of ground water to Class GA shall not be sought when: a) the ground water is in a zone of influence of permitted discharge; b) the ground water is designated as Class GB-- unless there is a demonstrated need to restore ground water to Class GA designation or where it can be demonstrated to the Commissioner that restoration to Class GA can be reasonably achieved; or, c) the ground water is designated Class GC."

CHART I Ground Water Classifications

<u>Class</u>	<u>Standards of Use/Discharge Allowed</u>
GAA	Public and private drinking water supplies without treatment/ Discharges restricted to wastewaters of human or animal origin and other minor coling and clean water discharges

- GA Private drinking water supplies without treatment/ Discharges restricted to wastewaters of predominately human, animal, or natural origin which pose no threat to untreated drinking water supplies
- GB May not be suitable for potable use unless treated because of existing or past land use/ All of the above, plus these areas may be suitable for receiving certain treated industrial wastewaters when the soils are an integral part of the treatment system. The intent is to allow the soil to be part of the treatment systems for easily biodegradable organics and also function as a filtration process for inert solids. Such discharges shall not cause degradation of ground waters that could preclude future use for drinking without treatment.
- GC May be suitable for certain waste disposal practices due to past land use or hydrogeological conditions which render these ground waters more suitable for receiving permitted discharges than for development for public or private water supply. Downgradient surface water quality classification must be Class B or SB.

With the above DEP policy and the integrated ground and surface water management approach adopted, the next steps were implementation and maintenance. This involved, first, the classification of all the state's ground water into one of the four use classes established.

In some cases, a projected reclassification was listed, i.e. GB/GA or GB/GAA. Such notation indicated the level toward which improving a specific area's ground water should aim.

The classification required detailed analysis of natural resource data, water supply and waste disposal practices data, land use information and the application of the DEP policy statement. Public workshops, meetings and hearings were scheduled.

Standards of use rather than standards of tested quality, (see Chart I), were chosen as guidelines for a variety of reasons including the flexibility to react to changing drinking water standards and new types of pollutants, and, the ability to prohibit certain discharge and land use practices in selected areas. Additionally, standards of use make enforcement easier and

simplify monitoring. It is expected standards of use will encourage consideration in local zoning and aquifer protection programs and make it possible to maintain state and municipal consistency with statutory goals.

The discharges of waste water from industry, municipalities, homes, landfills, lagoons and possibly hazardous waste storage and disposal facilities are legitimate uses and therefore must be provided for in both surface and ground waters. This critical but controversial conflict between water uses has been identified and mapped, as have the areas most suitable for water supply development.

DEP policies and standards set use requirements or limits, but they do not control actual discharges. Individual discharges are carefully controlled by the state permit and enforcement program. Permit issuance is controlled by the standards and no discharges inconsistent with a standard will be allowed. No permit may be issued which alters existing ground or surface water use, or potential use, without full control of the discharge and the zone of influence.

One obstacle faced by DEP is the inability of the state to verify, by sufficient ground water quality monitoring, that certain quality goals exist or will be achieved. Ground water monitoring needs, then, are being re-evaluated. In Connecticut, as in other states, considerable data is now being collected by various agencies. A major problem is the coordination and evaluation of this information, with improved ground water data management a major state objective.

Ground water quality monitoring in Connecticut is carried out by numerous agencies for a variety of reasons. The sites monitored by and for the Department of Health Services and the DEP, on a repetitive basis, represent the state's only ground water monitoring network.

The Department of Health Services administers a network of nearly 800 community water supply wells. Monitoring is done to ensure that the public served by community water supply systems is provided with water that meets state and federal drinking water standards. Public water supply wells, or systems served by those wells, are tested for physical, inorganic, chemical, bacteriological and radiological parameters. This type of monitoring is aimed at determining the quality of water that people are drinking-- potability monitoring.

Potability testing of private water supply wells is the responsibility of local health directors or regional health districts. Although such testing is done on a one-time basis, the data generated is one of the only sources of information on the inorganic chemical and bacteriological quality of ground

water in many areas. At the present time data on the quality of private water supply wells is not reported to state agencies and the program is inconsistently administered from town to town.

Two Units in the Department of Environmental Protection, the Solid Waste Management Unit and the Water Compliance Unit, administer ground water quality monitoring programs in the vicinity of pollutant sources. The majority of pollutant sources monitored by DEP are landfills. The Solid Waste Management Unit administers ground water monitoring wells at 72 landfills and an additional eight landfills have ground water monitoring programs administered by the Water Compliance Unit. Other ground water pollutant sources monitored by the Water Compliance Unit include two industrial waste disposal facilities, five septage lagoons and one community sub-surface sewage disposal system which discharges more than 5,000 gallons per day. The Water Compliance Unit frequently collects ground water quality data on a one-time or short-term basis at sites with ground water contamination problems.

DEP's Hazardous Materials Management Unit (HMMW) will be administering a ground water monitoring program in order to meet the requirements of the Resource Conservation and Recovery Act and Section 25-54cc-33 of the Connecticut General Statutes. The federal EPA and the HMMW have tentatively identified 107 industries or municipal waste disposal facilities that dispose of hazardous wastes on the ground or store hazardous wastes in lagoons. The operator of each facility will be required to develop and implement a ground water monitoring program. The HMMW estimates that approximately 25 of these facilities have either developed a new monitoring plan or have an acceptable monitoring program already in place.

The purpose of the DEP's Ground Water Monitoring program is to determine the composition of the discharge, the extent of the zone of influence of the discharge, and the effect of the discharge on the receiving surface water body. Ground water monitoring at septage lagoons and at many landfills monitored by the Solid Waste Management Unit is designed only to determine the effect of the lagoons or landfills on ground water quality immediately downgradient. The distribution of observation wells is such that the extent of the zone of influence cannot be determined at many sites.

The parameters measured at monitoring wells in the vicinity of landfills and other discharge to the ground are specified by the DEP and vary from site to site. At landfills having discharge permits, the sampling is the responsibility of the owner/operator of the site and is usually carried out by consultants. At landfills monitored by the Solid Waste Management Unit, the sampling program is predominantly carried out by DEP staff. Projected monitoring requirements are too great for the present staff and

in the future the owners of landfills will be responsible for sampling. Solid Waste Management Unit staff will continue to sample ground water at landfills which require monitoring but which don't have permits.

A significant new policy relates to plumes, which are zones of influence, of permitted discharges. Connecticut law prohibits creating any new pollution but allows the permitting of treatment systems designed to prevent pollution. Any discharge to the ground water, including septic systems, will alter the ground water quality. A policy has been developed to define the zones of influence boundaries and to require control of the land area over this zone. The projected zone, or plume, is permitted in whole as a treatment system, and the permittee must own or have easement to the land in order to operate and maintain the treatment system. This simple policy meets the law, protects other water uses or water rights, assures long-term control over pollution sources-- especially landfills, lagoons and hazardous waste facilities-- and simplifies monitoring.

DEP ground water standards do not specify actual limits for chemical constituents, but rely upon drinking water standards to define that quality suitable for drinking without treatment. Thus the standards and policies will not have to be revised every time a new limit for a pollutant is determined. Permits for treatment systems would have to be revised to reflect such changes.

The water quality standard adoption process allows for revision on a case-by-case basis through a public hearing process. If a discharge is proposed to ground waters classified as not suitable for receiving that particular waste water discharge, the applicant will be required to go through the process of revising the standard on the basis of social, economic, and environmental issues before a permit application could be considered.

Integrating the ground and surface water programs required redirection of the DEP water management program. The impact of the new standards included changing the Water Compliance Unit's approach to controlling pollution. General types or categories of pollution sources which primarily affect surface water can no longer be dealt with on a statewide basis. The unit must now deal with priority pollution problems that effect either ground or surface water. Greater emphasis on water quality planning and coordination with water supply planning is necessary.

In 1980 the DEP ceased to follow the federally required water quality plan, because it was primarily an inventory of surface water discharge, not a plan. Now, DEP plans will deal with every conflict within a basin in terms of standards; with options as to how to fix the problems, as removing a landfill, changing the land use or zoning, or changing storm water control

or agricultural practices.

The DEP has found tremendous conflicts: landfills within public water supply watershed areas, for example, or, in one town, a public water supply well that's located within the town landfill. For the first time, there is an integrated surface and ground water quality management program with specific goals and objectives. Comprehensive planning will guide efforts to prevent or resolve water pollution problems. DEP knows which problems to address as priorities; the new plans will allow staff to make intelligent decisions and to incorporate greater public input.

The standards and classifications effect all DEP programs and most of the department's policy issues. Implications of the new system may turn out to go well beyond what is currently envisioned; no doubt many questions will be raised where political factors, as town lines, and hydrogeological factors conflict.

With a comprehensive plan in place, the DEP realized that several important legal authorities were missing for the state's array of laws, and legislative action was called for. Control over ground and surface water withdrawal and allocation was needed, and this was obtained through a diversion bill passed in 1982. Authority to ban certain septic tank cleaning agents and to regulate underground fuel and chemical storage was also lacking, and such legislation was also passed in 1982. Authority to correct ground water pollution problems existed, but the authority to require that potable water be supplied to those persons whose wells were contaminated was needed because, in most cases, cleanup of ground water is not feasible in a timely fashion. Such authority was also granted via 1982 legislation, (see Legislation Section).

At the present stage in the DEP water quality program it becomes extremely important to evaluate local land use and water quality programs and controls and to maximize public involvement in ground water management program development. Any ground water management approach should include the review of, and possible modifications to local land use planning. If local officials, water utilities, the scientific community, legislators, and the affected public are not involved, not aware, or not in agreement with state goals, the program will not be successful.

The most serious problem encountered by the DEP so far has been the general public's lack of understanding of the need to identify areas potentially suited for waste disposal, i.e. Class GC.

section 2: Water Quality

According to the 10th Annual Report of the President's Council on Environmental Quality the quality and quantity of the nation's water resources is continuing to be threatened by pollution and misuse. There has been little or no change in the levels of the five major water pollution indicators. Rising population and increased industrial development appear to be keeping pace with clean-up efforts. However, while there has not been vast improvements in water quality in the U.S. since the early 1970's, it is not getting worst. Improvements in specific locations have been seen, largely due to better control of industrial and wastewater treatment pollution.

Two of the major national goals stated in the Federal Water Pollution Control Act are that:

- The discharge of pollutants into navigable waters be eliminated by 1985.
- Wherever attainable, an interim goal of water quality which provides for the propagation of fish, shellfish, and wildlife and provides for recreation in and on the water will be achieved by July 1, 1983.

Unfortunately, once traditional sources, such as sewage pollution and industrial discharge are taken care of, new problems from non-point sources become evident. Because of this it appears unlikely that Connecticut will meet the "swimable and fishable" goal by 1983. The EPA estimates that approximately 68 percent of the state's major rivers will be suitable for those purposes by that time. However, because Connecticut started this effort with highly polluted rivers, the progress can be seen as significant.

On the whole, the clean up of rivers has proved much more difficult and expensive than expected. For example, the Connecticut River after 15 years and a billion dollars still requires an estimated 10 years for clean up. Non-point sources, a large part of the present problem, promise to be difficult and expensive to alleviate. Urban and agricultural runoff, combined sewer overflow and toxic chemicals all pose substantial threats to Connecticut's waters, but are not easy to control. Farmers and planners must be alerted to the problem and thorough monitoring must take place.

Water quality protection is of particular concern in view of difficulties in obtaining funding for a monitoring program this past year. The U.S. Geological Survey (U.S.G.S.)

presently monitors 42 stations across the state for water quality. In order for this eight year old program to continue, half of the funding must be supplied by the state at a cost of approximately \$150,000. It is also a prerequisite for a federal EPA grant for water pollution control amounting to \$750,000. This past year the legislature vetoed a proposal to fund the monitoring network putting the program and federal grant in jeopardy. Fortunately funding was later supplied at the urging of local environmental groups and the DEP. A funding request will again be submitted to the legislature next year. Hopefully the USGS program, an integral part of the state's entire water quality program, will be able to continue. The Council feels that the monitoring network and the programs supported by the federal grant are essential to the health of the environment and the people of Connecticut. We strongly recommend that funding for these programs be assured to prevent the difficulties encountered this past year.

Ground Water

- South Windham: Five wells contaminated with the carcinogenic substances tetrachloroethylene and trichloroethylene.
- Brookfield: Wells supplying eleven homes made unpotable by a gasoline spill.
- Beacon Falls: Past illegal dumping of chemicals contaminated twenty residential wells.
- Farmington: Well water at Tunxis Community College and approximately 35 residences of Farmington Industrial Park contaminated with trichloroethane and tetrachloroethylene.
- Tolland: Leachate from a landfill contaminated the water supplies of twelve families.

These are just a few examples of the problems confronting the 35 percent of Connecticut's population depending upon groundwater for domestic use. This year because of increasing threats to drinking water supplies, the Water Compliance Unit of the DEP has proposed changes in Connecticut's water clean-up program. For the first time, ground water supplies will be regulated.

The Unit is currently working on revision of the State Water Quality Standards and Criteria as required under the Federal Water Pollution Control Act. This year for the first time standards and classifications are being proposed for groundwater as well as surface water. The proposed classification of groundwater was determined by means of a survey. The purpose of the survey was to identify the location and categorize the quality of groundwater sources. Each watershed was looked at individually to assess the water's suitability for various uses. Factors considered here include present locations of public water supplies, proximity to point

sources of pollution, potential to be affected by non-point sources, and the hydrogeology of the area. The proposed classifications and their meanings are as follows:

- GAA: Existing or proposed public drinking water use without treatment, may be suitable to receive discharges of domestic sewage or wastes from acceptable agricultural practices on backwash from public drinking water treatment systems or other minor cooling or clean water discharges.
- GA: May be suitable for public or private use as drinking water without treatment, may be suitable to receive discharges permitted in GAA areas in addition to effluents containing substances of natural origin or material which easily biodegrade in the soil system.
- GB: May not be suitable for public or private use as drinking water without treatment, may be suitable for receiving discharges permitted in classes GAA and GA and certain treated industrial waste. Located in areas where historical industrial or residential development has or is likely to render the groundwaters unsuitable for drinking water without treatment. Known or presumed to be degraded.
- GC: May be suitable for certain waste disposal practices because past land use or hydrogeologic conditions render these groundwaters more suitable for receiving permitted discharges than development for public or private water supply. May be suitable for all discharges allowed in other areas as well as other discharges that will not cause a violation of adjacent surface water classification.

The results of the survey and classification will be important in locating future water sources, determining problem areas in need of clean-up and to help in siting waste disposal areas. Unfortunately the present classification program is not supported by extensive monitoring. Some information is available from testing of municipal wells and test wells located near landfills but for the most part classification represent approximations of conditions. A groundwater monitoring network would greatly enhance current efforts to protect water quality. However, such a program would be expensive and to date funding requests have not been granted. Perhaps as the seriousness and extent of the contamination problem becomes more evident this situation will change.

Like other forms of pollution, groundwater contamination affects health, property and future land use. Groundwater is a very important but fragile resource. Once contaminated it may remain unuseable for hundreds of years, even after the source

of the original contamination has been eliminated. Precautions must be taken now to prevent future long term or irreparable damage. Water is a resource that no one can live without.

section 3: Water Resource's Improved Enforcement Procedure

To overcome the problem of violations of permits, statutes, and regulations "falling through the cracks," the wetland section of the Water Resources Unit has developed a enforcement procedure. The programs affected include inland wetlands and watercourses, stream channel encroachment lines, tidal wetlands, structures and dredging in navigable waters, and marine mining. Previous to the new program, each inspector was responsible for enforcement and follow-up activities. Because there was no specified procedure for dealing with violations, they were hard to keep track of so that a satisfactory solution could be completed.

A staff member was appointed to address the problem and devise a comprehensive enforcement program. There are a number of points needed to consider in developing such an enforcement program. First, the concern of the regulatory programs involved is primarily land use as opposed to activity oriented. Second, the regulatory programs have a varying degree of specificity. The newer programs have much more specific statutes and regulations. Third, Water Resources does not have sufficient personnel for certain staff members to devote themselves entirely to enforcement activities. Thus, these activities would have to fit in with the duties already assigned to the field inspectors. Fourth, one staff member would have to devote some of their time to the clerical and follow-up efforts necessary to keep track of the progress made with each violation.

The statutes and regulations pertaining to the pertinent regulatory programs were identified, it was evident that one procedure could be developed for all the programs. This is in the interest of efficiency without sacrificing effectiveness.

The procedure developed can be broken down into three steps:

- 1) Unit receives a complaint or request for an inspection concerning a violation.
- 2) Existence of a violation is verified by a field investigation.
- 3) An administrative resolution is adopted and pursued until the violation is corrected.

When a complaint/request is received, necessary information is recorded on a request for inspection form. There are different forms depending on the program involved. The same

form filled out in the office is used by the field inspector to record pertinent information gathered during the inspection.

Once a violation is verified, it receives a file number and is recorded in the appropriate log book. The file numbering system was devised to eliminate problems experienced previous to the new enforcement system. The number consists of initials designating the program (e.g. tidal wetlands=TW), initial of staff assigned that year, and function (either blank indicating a permit or V indicating a violation). (Example TW-M-82-155-V). The program designation, year, and function were not originally included in file numbers, creating several points where numbers might be confused. The new system eliminates this problem. The new number system also makes it easier to keep statistics.

On the basis of his site inspection and information concerning the violation, such as whether or not the person committing the violation has a permit, the field inspector suggests an administrative resolution to the staff member in charge of initiating and following up on action concerning the violation. The staff member then implements the decision subject to the approval of the various program directors.

There are six basic administrative resolution options:

- 1) Investigatory letter(formerly "Notice of Violation" letter)
- 2) Enforcement Order (Permit Compliance Order)
- 3) Permit Revocation or suspension
- 4) Cease and Desist Order
- 5) Summary Suspension of Permit
- 6) Transmit Case to Attorney General

The action implemented depends on the presence of a valid permit, whether or not the violator is recalcitrant and the seriousness of the violation. The cease and desist order and the summary suspension of permit are options to be used when health, safety, and welfare are threatened. Because the police power lies with the courts for all of the regulatory programs involved, the seriousness of the situations where these options might be implemented usually dictates that such cases be directly transmitted to the Attorney General. This option is also exercised when every last recourse is exhausted for the enforcement of appropriate statutes and regulations.

Once a decision is made regarding appropriate administrative action, the staff member charged with the majority of the enforcement responsibility will send out the appropriate letters. There are now standard forms for many of the letters. The

letters state not only the nature of the violation, but also what must be done to satisfactorily correct the violation and what will happen if the violators does not comply. These letters also specify a time frame developed individually for each violation in which the violator must comply. This time frame plays an important part in keeping the enforcement activities organized and on schedule.

Each violation is placed on a color coded card with a color coded tab assigned according to the time table established for the violation. The staff member dealing with enforcement activity periodically checks the cards and reviews the progress of each case. The appropriate letter is sent or inspector consulted until the case is satisfactorily resolved.

If the case is referred to the Attorney General's Office, the progress still must be evaluated by the Water Resources staff member. The Attorney General can either resolve the violation administratively, by forcing the violator to comply with the appropriate statutes and levying fines, or he can issue a court order. In both cases, the unit referring the case to the Attorney General is responsible for following up on its progress and keeping the Attorney General informed on its status.

The new enforcement procedures adopted by the wetland section of the Water Resources Unit have proved quite effective. Communication between the parties involved including inspectors, violators, administrators, and when necessary, the Attorney General, is facilitated by the organization of the new procedures. Communication with other units when a violation overlaps with their activities is more easily coordinated. The improved organization and comprehensiveness of the program lessens the processing time for the violators. Most importantly, because follow-up is part of the procedure, more violations are being resolved satisfactorily and not ignored, overlooked, or otherwise missed.

**CONSERVATION
AND
PRESERVATION**

section 1: Deer Management

Deer management is the responsibility of the Wildlife Unit of the Department of Environmental Protection. This unit has a three purpose goal:

- 1) to manage the state's deer population in a biologically sound manner,
- 2) to provide a sustained yield of a renewable resource for wise use by the people of Connecticut,
- 3) to maintain a healthy and productive deer population at a density compatible with the carrying capacity of the habitat and other land use.

Connecticut was not recognized as a deer hunting state until recently (1975). The state is an interesting cross of northeast industrial, high per capita (2nd to Alaska and Hawaii), and more than 60% forested. It has been estimated that over a six year period (1975-1980) deer hunting has provided 500,000 days afield, 40,000 pounds of venison, \$800,000 to the state treasury and \$49,000,000 to the state's economy.

The deer population in Connecticut is increasing. Estimates between 1955-1960 placed the number between 6,000 and 8,000. Aerial surveys were done for the years 1974 through 1978 and concluded that the population was between 19,000 and 22,500 that overwintered. With the expected fawn production, it is estimated that more than 30,000 deer are present at summer's beginning. This increase should be able to continue for at least four to six years without any additional habitat or browse being added.

The Wildlife Unit also has to overcome the accusation of being 'front men' for the hunters. Working with the Connecticut General Assembly, they have tried to satisfy all classes of the state's citizens and still protect the deer resource. They are working on conservation and resource renewal principles. The results will begin to judge whether their scientific wildlife management is working.

The following description of the Wildlife Unit is taken from the 1978 Annual Report of the Connecticut Council on Environmental Quality.

The Wildlife Unit of the Conservation and Preservation

has the responsibility for planning and managing both game and non-game wildlife species in Connecticut, including habitat management and the release of game species (such as pheasants). Often criticized for devoting a disproportionate share of its time on game animals only, the Wildlife Unit has clearly suffered the same staffing shortfall of the other C&P Units.

To be sure, of the 327 species of wildlife in Connecticut, 40 are indeed classified as game animals and are regulated by the Wildlife Unit in the form of restrictions on season times and bag limits. Specialized programs such as the Deer Hunting Permit and Management Program and the Pheasant-Stocking Program do absorb much of the Unit's existing staff time. In 1977, the Unit stocked over 42,000 pheasants, an increase of over 4,000 over the earlier years.

However, the Wildlife Unit has not been able to receive budgetary approval for positions for non-game species management. There are at least 11 species of wildlife for which there is special concern. All are native non-game species whose existence in Connecticut is marginal. Survey work, research, public relations and habitat management are critically necessary to assure the survival of these species. The federal legislation, which has been enacted, authorizes reimbursements for state programs which qualify with acceptable program criteria and staff hired for this purpose. Unfortunately, to date no additional positions have been approved, and the Unit has had staff only for the limited research programs currently in process: waterfowl census and banding; deer population surveys; and wild turkey restoration.

Habitat management is unquestionably the single most important technique in preserving wildlife. The state loses many valuable acres of wildlife habitat each year; improving the quality of the remaining land is an available means of compensating for this loss. Unfortunately, the critical task of providing diverse wildlife food and cover cannot take place without specialized staff. The state presently has over 200,000 acres of wildlife management areas which could be more suitably managed for habitat diversity. Federal funding is also available on a 75% matching basis. However, to date no positions for this purpose have been approved.

The crop damage control system in Connecticut is basically concerned with the damage caused by deer. This program fits relatively easily into the permitting process of the Department of Environmental Protection. As caretaker of the state's natural resources, they are given this responsibility.

For the last 7½ years this program has been administered through the Wildlife Unit. It took 20 to 25 years of legislative effort to get the program to where it is today. In that time the state's deer population saw a threefold increase, to more than 30,000 deer. The Wildlife Unit must blend this responsibility with the best interest of all the state's residents.

While the deer herd was undergoing expansion, the outward movement from the urban area was taking place. The move to suburban and rural locations has had a two-fold impact. First, forested areas are being opened up allowing for more deer browse and second, bringing more people closer to the deer habitat. This has contributed to more deer-landowner conflicts. Combine this with the impacts of inflation and fuel costs, leading to more wood cutting, also tending to encourage browse. These wood cuts, creating more foreage, can lead to greater fawn production. As the deer population increased, the complaints from the landowners show an increase.

The combination of housing expansion into areas inhabited by deer and the use of timber and cordwood means more deer food leading to more deer. As their numbers increase and choice feeding areas decrease, the deer will expand into adjacent areas. By keeping the deer population below the level that causes the food competition, the range can be somewhat controlled.

It is important to remember that deer are primarily browsers and feed on sprouts, shoots, and buds. To find this kind of food supply, the deer are drawn to the edges of forests, many times located near existing farms, pastures, and recently new residential developments. The movement of housing to forested areas is adding the homeowner as another group affected by deer damage.

The state approach to the deer damage problem has been an attempt to hold the deer to appropriate levels. This philosophy then encourages hunting as a practical means of accomplishing this. Although hunting is the method to control the damage, there are more persons who want deer, to see, to photograph or to hunt, than there are persons who don't want deer at all. Therefore, the state would not condone eradication of the deer even if it were possible.

The use of hunting as a control tool means it plays a part in all the management positions. The deer-landowner conflicts fall under the Deer Damage Permit section. These permits are treated differently than the regular deer hunting permits.

During the early period of Connecticut history, deer were classified as an agricultural nuisance. The numbers were not

as great as they are today. Recent changes in land-use are continuing to produce more favorable deer habitat.

The state underwent a considerable change in forest cover during its history. By 1790, two-thirds of all the timber land had been cleared for cultivation and pastures. When industrialization began to dominate the state, around 1850, the agricultural use declined and by 1960 almost two-thirds of the state was once again forest.

Starting in 1907 landowners were permitted to shoot deer that were causing crop damage. In subsequent years lessees, lineal descendants and designated agents also were authorized for that purpose. Under this system the individual who killed a deer causing crop damage was allowed to keep it. This was to aid in the reporting of the deer kills as well as to give an incentive to hunters to serve as agents for the landowners. These considerations have continued to today's law.

With the involvement of the Wildlife Unit, a more systematic approach was used with the crop protection permits. The accumulated data began to be examined for any trends that would indicate the success of the program.

From 1975 to 1979 there were 16,727 permits issued. During this same period the state received only 2,582 reports of deer being taken. The rate was a very low 15.4 percent, a figure which did not correlate well with the amount of damage being done. When investigating the sex ratio, weight, and points of males, it became obvious that this protection system was more than likely being used as a trophy hunting season. This system was effective in extending the season for landowners and their agents. It also gave them the opportunity to kill more deer during the regular hunting season.

It appeared to the Department of Environmental Protection that this killing of bucks was not going to be effective in alleviating further crop damage. It would be more beneficial to eliminate the producers (does) and not the trophies (bucks). The reported damage kills amounted to approximately 64% of the legal deer season figures.

The deer population could potentially double every second year. It is estimated that one doe can produce 15 or more fawns in an average life span of eight years. Projecting this out, if all her young did the same, a family of about 150 deer would be produced before her death. Females can reproduce as early as one year old, although the rate is low. At age 2½ years and older she can bear two fawns each spring.

In 1976 a project was initiated in Connecticut to determine the peak of breeding activity. Data was gathered between April and June (1976 through 1979). Mainly road killed females were examined and fetuses were removed and measured to calculate conception. From this they could also calculate what time birth would have occurred.

The data concluded that the peak period of conception in Connecticut is around the last week in November, with the fawn birth period the last two weeks in June.

This data was important because from a management viewpoint the state feels does, and possibly pregnant does, should be the target of people interested in crop damage control. It can also help them in setting the timing for permit issuance and perhaps establishing a deer damage hunting season if abuses continue.

Because the 1975-1979 examination of deer damage records raised some questions, changes were made in the legislation. A program was implemented that was to respond to agriculturist who were undergoing legitimate damage and economic loss. Thus people were still given the opportunity to obtain the permits to aid in reducing damage.

The program was designed to protect the commercial cultivator who was producing or resale. Grain, fruit, ornamental, vegetables, flowerd, forage, and Christmas trees were taken into consideration. A loss of \$500 cash gross income must be occurring from these commercial products for the landowner to qualify.

The new system issues a maximum of 6 permits at any one time to a qualifying landowner. By law each deer taken must be tagged and a written report submitted within 24 hours. (The past honor system method was done away with but the landowner can still keep the deer). A replacement permit is issued when the permit report is received. Thus, a qualified landowner will basically be keeping his maximum number of permits available. Therefore, there is no reason not to report a deer that is taken. Records show only 32 growers of the 268 involved took 6 or more deer, with the maximum of 15 reported from each of two farms.

As a result, the 1980 figures compared to those of 1979 reveal the following (see Table I):

TABLE I

	<u>1979</u>	<u>1980</u>
A. Only commercial growers qualified in 1980, rather than any Connecticut landowner	2148	268
B. Total permits issued	5102	1636
C. Acreage where permits can be used	247320	43320
D. Total of deer reported	906	639
E. Male to female sex ratio of deer taken	1.8:1	1.4:1
F. % of males, 6 points or over from all lands	52.3%	37.4%
G. % of males, 6 points or over from landowners reporting 6 deer or more (maximum was 15 reported).		29.4%

The above figures comparing 1979 to the revised 1980 system indicate that 87% fewer landowners issued 68% fewer permits. However, 639 deer were taken, only 267 deer less than 1979. It is obvious that the program is working for the landowners having problems, using fewer permits, to take and report more deer on less acreage but more specific locations, than ever before.

At the same time this has occurred, the state hunting season deer take increased 156% from that of 1979. Two deer reduction hunts, one of which removed 28 deer per square mile, is a further indication that the damage permit system is by no means affecting the season hunter or jeopardizing the statewide deer herd.

Some complaints again surfaced in 1981 concerning the Crop Damage Permit system. This time the issue was brought out for more public discussion. Part of the problem dealt with the fact that the Wildlife Unit administered the permits while the Law Enforcement Unit had the police authority.

Conservation Officers (enforcement) in various parts of the state felt that the law was being abused. They felt that loopholes had resulted in needless deer kills. While supporting the intent of the law, they felt that it needed to be "tightened up".

One concern was the fact that a landowner could always keep permits around to allow him to kill six deer. This gave a year round permit to hunt deer. It also theoretically gave him an unlimited number of kills.

The second concern has to do with landowners who are not really a commercial venture, but plant trees or crops to qualify for the permit. While this is judging someone's intent, a closer permit review including IRS material will reveal if the landowner is a commercial operator or not.

The Wildlife Unit also has seen these actions as possible abuses and keeps a close watch on the year end statistics. Because very few of the permittees come in for a second set of six and because the male-female ratio has dropped, the Wildlife Unit feels the program is working.

The comparisons between 1980 and 1981 may back up some of the complaints. Upon investigation of the 1979 statistics, one can see the change in the law was effective. Further considerations may protect the law from being abused again.

TABLE II

CROP PROTECTION-DEER DAMAGE STATISTICS
OLD CROP DAMAGE SYSTEM

<u>Year</u>	<u>Landowner</u>	<u>Acreage</u>	<u>Permits Issued</u>	<u>Deer Reported</u>	<u>Sex Ratio</u>
1979	2148	247,320	5102	947	1.8:1

NEW DEER DAMAGE SYSTEM

1980	268	43,320	1636	639	1.4:1
1981	257(1)	43,775(2)	1892(3)	839(4)	1.5:1

COMPARED 1980 to 1981

- (1) 5% decrease in landowners
- (2) 455 acre increased
- (3) 15% increase in permits issued (256)
- (4) 31% increase in deer reported (200)

In the 1982 Legislative session, amendments were considered for the deer damage permits statute. The intent was to make any person who violated the state's fish and game laws ineligible for a deer damage permit or to act as an agent for a landowner.

The amendment was supported by the Wildlife Unit. They also emphasized other charges that could help their work. This action was seen as a sigh that the state would be getting tougher with enforcement and the handling of any violators.

Opposition to these changes came from the Connecticut Farm Bureau and the Connecticut Sportsmen's Alliance. They felt it

was too strict a penalty, it might be retroactive, and it could cause conflicts between landowners and their designated agents.

Another response to the criticisms came from the Department of Environmental Protection. By moving the program to another part of the state statutes they would have the ability to promulgate regulations and react faster to abuse. The main objective is to prevent abuses while protecting the commercial cultivated agribusiness.

In all of this the Department's philosophy can be summarized as follows:

It is a simple fact that when agricultural production goes down, costs to the consumer rise. Every grower, housewife, environmentalist, protectionist, and taxpayer is affected by deer damage losses to the grower. The final questions are very simple. Do you choose to pay higher prices, see small growers go out of business, bring higher taxes to growers' deer damage losses, or allow a highly regulated deer damage permit system to operate which has no impacts on the longevity of our deer natural resources?

The scientific management of deer in Connecticut has brought to light questions and concerns of the general public. The programs conducted by the Wildlife Unit attempt to follow their earlier goals. Maintaining a resource and aiding the people of the state are combined in their program.

The reasons for the deer herd increase can be attributed to various causes. Most likely it is a result of increased deer habitat, but adaptability to humanization, and better census techniques could also play a part.

The Wildlife Unit has to continue its examination of the physical condition of the deer herd. Disease, illness and other characteristics can then be determined. This data can then be put to use in their management programs. Hunting is the major way of getting the animals for examination in Connecticut. The Wildlife Unit sees hunting as a necessary tool of management and a means of harvesting an annual surplus which would otherwise be wasted.

The deer herd in Connecticut faces its biggest threat from habitat loss, the same as many other wildlife creatures. Habitat is removed by maturing forests, housing construction, commercial development, and industrial expansion. Illegal shooters are suspected of taking a large number of deer, with auto kills and dogs responsible for smaller numbers.

The Crop Damage Control programs have different emphasis in various state. In comparing Connecticut with New Jersey, New York, Pennsylvania, Vermont, New Hampshire, Rhode Island and Massachusetts, some interesting differences were found.

While hunting was the main control effort in Connecticut, it is not as dominant in the other states. Disposition of the carcass is another difference.

1. Connecticut is the only state that does not investigate the complaint of damage before issuing the permit. On parcels under ten acres, an investigation is conducted.

2. In Pennsylvania the landowner may keep the deer only if the land is open to public hunting. The landowner is allowed to keep only one deer for use at a time. Multiple kills or extras are taken by the state.

3. New York allows the landowner one deer with any others going to needy families.

4. Reimbursement is made to the landowner in Massachusetts, New Hampshire, and Vermont if the land is not posted against hunting. This sort of program would give more need for better complaint investigation.

5. New Jersey prefers the use of fencing and repellents. The state will provide these to landowners who obtain 75 percent or more of their income from crops. Pennsylvania also provides the fencing but has complaints because of the cost of installation.

6. New Jersey requires all deer to be turned over to the state. These are sold for meat processing or pet food depending on the time of the year.

7. No permits were issued in Rhode Island over the last ten years. The landowner does not have to be a commercial operator to get a permit.

The crop damage protection system is part of the overall deer management program in the state of Connecticut. Abuses and the chance for abuse make the program, like most others, a subject for oversight. With the administration in one unit and enforcement in another, there is bound to be a difference of opinion. The method of the program was not questioned; only was to assure landowners have valid claims. The hunting technique is not criticized by the two units.

Ironically, now that the deer is considered a game animal and not an agricultural nuisance, it is being afforded more

protection than in the past. The Wildlife Unit has tried to institute standard procedures to prevent abuses (Appendix G). The program will remain essentially the same as long as hunting can control crop damage and deer resource as acceptable levels.

DEER DAMAGE PERMITS

1. Qualified landowners with \$500.00 incomes from Cultivated Commercial Commodities who are experiencing severe deer damage may obtain six deer damage permits by submitting a special notarized application from available from the Wildlife Unit. (This will provide the commercial agricultural producer increased opportunity to solve deer damage problems if he is losing part of his taxable income due to severe deer damage).
2. Permits are valid for the calendar year of issuance, rather than for four months. No pre-inspections are required. However, properties may be checked, and permits will be reviewed and revoked for cause. Law enforcement action could follow.
3. Landowners may continue to use designated agents for taking deer. However, no person may be a designated agent for more than one landowner. (The abuse of the designated agent provision is thought to be a contributing factor in the high illegal deer kill and it has been used as a trophy hunting system. Some individuals have held enough permits to take more than 20 deer).
4. The commissioner may specify the type of hunting implement and ammunition which shall be used to take deer under the damage permit when public safety could be jeopardized.

DEER MANAGEMENT AND ASSOCIATED REGULATIONS

1. Cooperative State-private landowner regulated deer hunting areas can now be established to help control deer populations.
2. Landowners and their lineal descendants are eligible for free "Personally Owned Land Firearms deer season" permits for using a rifle, shotgun, or muzzle loader on their own property from November 1 through December 31. One permit will be issued for the first 10 acres, and one permit for each 20 acres thereafter, provided sufficient acreage is available. Only one permit per person may be issued, however.
3. Landowners need not come to mandatory deer check stations, but are required to report deer kills by mail within 24 hours.
4. The landowner can determine if hunting on his land will be by shotgun or rifle (6mm or larger) during the regular 15 day private land shotgun deer season. (Rifles are not permitted on State land). This permission will be indicated on the Landowner Consent form.
5. Possession of muzzle loader projectiles other than round ball will be illegal, as will be the use of telescopic sights on muzzle loaders.
6. Possession of mechanical archery release devices will be illegal.
7. The 1980 archery season will be a straight season starting one-half hour before sunrise on October 1 and continuing through sunset the day before Thanksgiving.
8. Each of the four different types of paid deer permits will have a deer tag attached so that a person holding more than one permit can legally take more than one deer per year. Types are: archery; private land shotgun; private land muzzle loader; state land shotgun or state land muzzle loader. No more than one deer can be taken on each permit.
9. The every-other-year exclusion for successful permittees in the State land shotgun lottery is eliminated. (Thus 1979 permittees may enter the 1980 lottery).
10. The shotgun season on State land will be split into two segments of six days and nine days duration during the normal 15 day period. Thus twice as many persons may be selected in the lottery, with half hunting for six days and the other half hunting the remaining nine days. (This will provide sportsmen more opportunity to hunt each year).

DEFINITIONS

Commercial Cultivated Production-

Commercial- bought or sold in large quantities of industrial use; made or done primarily for sale or profit.

Cultivated- tilled; trained or developed, cultured; to break up soil around plants to destroy weeds, ect.

Production- the creation of economic value.

section 2: License Fee Increase

As of January 1, 1983, the purchase price for fishing and trapping license fees have increased in the State.

Some sportsmen objected to the increase in fees, while others realized that eventually they would benefit from such increases which will return to the state's general fund.

Increased funding was sent to the state legislature to the Department of Environmental Protection's Conservation and Preservation Unit of July 1982 in anticipation of increased state general fund revenues from sales of license slated to increase in cost in January 1983, as well as from higher parking fees in the state's parks and recreation areas.

This increase in revenue will be used to benefit everyone. The state's sportsmen will be most aware of the benefits through increased staffing and other services.

The DEP/C&P Unit recieved 1.6 million more dollars during the 1981 legislative session than was recommended and \$2 million more than the Unit expected. This increase in funding will be used to stock more pheasants, provide conservation officer positions, adequately staff the C&P unit, the DEP, and state fish hatcheries.

This fund will also be used to purchase new equipment. The equipment budget, originally set at \$10,000 for fiscal year 1982 was increased to \$500,000. New purchases range from heavy-duty trucks for wildlife area upkeep to portable radios for conservation officers.

Most divisions of the DEP's C&P unit have benefited in some way from the increased funding, an increase due largely to efforts by the Connecticut Sportsmen's Alliance, who along with others worked very hard to convince legislators that if license fees increased, the increased revenues should generate back into the Conservation and Preservation budget.

Several bills were proposed which would have sent revenues from license fee increase directly to the DEP. The legislation instead opted to increase the DEP's C&P budget by an amount that would nearly equal the expected state general fund increase due to the higher fees.

The DEP has resisted license fee increase for many years. This past year, however, the legislature was willing to increase the department's budget to reflect fee increases. The support and assistance of the state's sportsmen was available to lobby for the C&P unit's cause.

The monies which come in from the sale of licenses will go for the conservation and preservation of the state's wildlife, wilderness areas, parks, and to ensure continued consideration of the importance of recreation to state residents.

Connecticut hunting, fishing, or fishing license for Connecticut residents increased from \$5.00 to \$9.00 on January 1, 1983. The cost of each of those licenses had been \$4.35 plus \$.65 for the local Town Clerk's Office which issued the license. A combination firearms hunting and fishing license which had cost residents \$7.00 increased to \$12.00.

There are separated licenses for archery hunting (\$9.00) and trapping (\$16.00). State trappers had requested that the permit to trap be separate from the regular hunting and fishing licenses. Prior to January 1983, hunting licenses were stamped at no extra charge if a sportsmen wished to use a bow and arrow or to trap.

New licenses include junior firearms hunting, junior archery hunting and junior trapping permits at \$3.00 each, required for sportsmen 16 years old or younger. Junior firearms and archery licensed are for those 13 to 16 years old, who must be accompanied by a licensed hunter over 18 years old.

Lifetime licenses for those 65 years of age or older are still issued free of charge, but the special \$2.00 license fee for residents members of the armed forces has been dropped.

Non-residents must pay an increase from \$5.00 to \$16.00 for archery hunting. The non-residents firearms hunting license is \$27.00 and the combination firearms hunting and fishing license is \$35.00. Fishing licenses for non-residents cost \$17.00 for a full season and \$8.00 for a three-day permits. A new non-resident trapping license cost \$200.00 and can only be issued directly by the DEP.

When the increase in license fees was suggested, there was some opposition to this. It was felt that if licenses were to be more expensive for sportsmen, then the increased revenues should be spent directly on conservation and preservation activities with the fees going straight into the DEP budget. Others felt that increasing the fees was simply an oblique way for the state to raise revenues by focusing on a particular group, the state's sportsmen.

The DEP believes that if the department receives a budget increase comparable to what is expected as revenue in increased license fees, the increase is justified and the monies are being spent properly.

One segment of the state's population that did not react negatively to an increase in fees is the group that uses state parks and beaches. Fees for parking have gone up at inland parks from \$1.00 to \$2.00 and at shore parks from \$2.00 to \$4.00 per vehicle. Walk-ins can still walk into a state area at no charge.

Two million dollars has been appropriated from this year's state budget for capital improvements to the parks and recreational areas. Further loss of the beach area at Rocky Neck State Park has been prevented by stabilizing the flow of Bride's Brook. A new lifeguard building was constructed at Rocky Neck, and renovations have taken place at Squantz Pond State Park, Southford Falls State Park and Black Rock State Park. Rocky Neck's renovations include what is basically a whole new pavillion and at the Harkness Memorial State Park a new entrance road and parking area as well as stabilization of the public beach area have been completed.

Hammonasset Beach was the recipient of the most extensive renovation, with road improvements, an electrical distribution system replacement, and refurbishing of the existing concession buildings.

Several million dollars has been set aside for renovation work at Sherwood Island, and money will be spent on major renovations to the mansion at Harkness Memorial State Park.

section 3: Boat Registration

Legislation passed by the 1982 and 1983 General Assemblies requires that Connecticut and out-of-state registered and Coast Guard documented vessels using Connecticut waters for more than 60 days per season must obtain and display a valid Connecticut registration decal.

Prior to 1981, most Connecticut boat owners were required to pay personal property taxes on any vessel from a yacht to a motor-powered dinghy. The state felt it was losing money because some boat owners registered their boats in Delaware or New Hampshire, two states where there is no sale tax, and the owners avoided paying Connecticut property taxes.

The General Assembly in 1981, to rectify the situation, passed Public Act 81-423 which exempted all vessels from property tax and instead required annual registration. The 1982 registration schedule was graduated based upon size and began with boats under 12 feet in length and required those owners to pay a fee of \$10.00. The fee schedule includes boats up to 65 feet and over for whom the registration fee is set at \$700. Exemptions from the fee were made for seaplanes, rowboats, foreign vessels, federally-documented boats, lifeboats, government boats and the like.

Wooden vessels 15 years old or older required payment of only half the regular fee amount, and wooden boats 25 years and older paid one-fourth of the set fee. A fee of \$25 was required for commercial fishing vessels if the owner received at least 50 percent of his gross income from fishing in the previous year. If not, the commercial boat owner would be required to pay according to the regular fee schedule based upon length of hull.

In 1982, the General Assembly amended P.A. 81-423 to include registration fees for pontoon boats, excluding houseboats, for a fee of \$40; for powered canoes under five horsepower, a fee of \$15; and a \$10 fee for a vessel under 15 feet with less than 15 horsepower.

Under present state boat registration law, boat owners register their craft through the Department of Motor Vehicles, which is the fee collector. The Department of Environmental Protection is the registration enforcing body, and tax offices in the state's towns still receive their revenue.

The infant law which went into effect July 1, 1981 was surprisingly successful its first year. It left most boat owners, the two state departments, town tax offices, the Connecticut Marine Trade Association and the law's sponsors pleasantly surprised.

State town received \$2.4 million or 97.6 percent of their promised money. Payments were to each town in lieu of the property tax revenue based upon a formula established by the 1981 law.

In addition, the DEP's boating fund for administration, safety and reimbursement to towns was increased from \$400,000 to \$800,000. There was a 39 percent increase in the registration of boats 26 feet long and longer, which was exactly what the law was intended to accomplish. Collection of unpaid use value and sale taxes amounted, furthermore, to almost nine million dollars.

The Connecticut Marine Trade Association worked for many years to eliminate what they thought was a bad tax-- the personal property tax on boats. Changing to a system of registration has eliminated the need for those who maintain out-of-state corporations to pay a use tax, and enforcing officers note that many more Connecticut home towns are now listed on boat sterns.

Officials expect that even though last year there were 67,000 registered boats in Connecticut, there is another \$3 or \$4 million dollars that can be collected in sales taxes due to hundreds, perhaps thousands, of boat owners who have never paid sales tax on their boats.

Most boat owners feel the new system is fair, and they pay their taxes willingly. Some legislators and some lobbyists, however, think some changes will eventually have to be made in the law to make certain fees equitable. Many feel it's unfair for the owner of a 10 year-old 26 foot boat worth \$8,000 dollars to pay the same fee as the owner of a new \$30,000 26 foot cruiser.

The Connecticut marine Traders Association would like to see a reduction in fees once the state gets an excess in the expected registration revenues. But no one seems to want to go back to the personal property tax on boats-- except, say officials and marina owners, those who probably weren't paying their property tax anyway.

COASTAL AREA MANAGEMENT

section 1: Coastal Area Management Program

The Federal Coastal Zone Management Act (CZM) of 1972 gave Connecticut and other coast-line states the opportunity and financial means to set up a state-wide coastal management program. The CZM Act provides federal funding for 80% of the costs of designing and maintaining the coastal management program. The state must comply with certain broad procedural guidelines before the plan can receive final federal approval. The other 20% of the funding comes either through in-kind services performed by the state or via an annual state budget allocation.

Connecticut's Coastal Area Management Program (CCAMP) began in August 1974. The program is responsible for monitoring local and state agency coastal management efforts, initiating enforcement actions for non-compliance, administering the coastal management grants program, providing technical assistance, and conducting coastal related research projects.

Coastal Area Management operates within the Office of the Commissioner of Environmental Protection and is housed in the Office of Planning and Coordination/Coastal Management. Under Chapter 444 of Connecticut's General Statutes (P.A. 78-152 amended by P.A. 79-535), CCAMP was designed to operate without the creation of a new regulatory or bureaucratic office.

During the period from 1974 to 1980, CCAMP developed its state-wide coastal plan. The plan was signed into Connecticut law on June 29, 1979 and became effective on January 1, 1980. This ended the developmental stage of the plan and began the implementation stage. The plan was then submitted to the Office of Coastal Zone Management (the controlling federal agency) for final federal approval. Final federal approval was granted September 1980 by the Office of Coastal Zone Management. Without final federal approval Connecticut would not be eligible for federal money under the Coastal Zone Management Act.

Functional Role

The Coastal Area Management Plan was created because of the overall lack of coordination among the management authorities governing the coastal areas. Another reason for CCAMP establishment was the inadequate consideration of the

adverse impacts development has on the natural resources native to the area. CCAMP was tailored made to correct these problems.

The Coastal Area Management Program utilizes the array of existing state and municipal regulatory programs as it's function and has two central purposes. First, to assure the adequate consideration of the impacts of development on coastal resources is given by both the state and coastal municipalities. Then second, to increase the level of intergovernmental coordination through planning and regulatory programs affecting the coast by providing common state-wide policies to guide federal, state, and municipal agencies.

The Coastal Area Management Program's main focus is to protect the resources at the landwater interface which are being affected by the natural coastal processes and the protect the adjacent land and water resources. The first step is to deliniate the coastal boundary and then establish specific coastal policies and standards. The coastal boundary map (Figure II-1) fills the first requirment of the plan. Table 1, lists the Coastal Municipalities which have programs under development as of 1983.

Although CCAMP is designed to provide the governmental framework and standards for the coastal plan, there are some problems that CCAMP cannot resolve. CCAMP will not provide immediate and complete solutions to all coastal problems and issues. CCAMP doesn't have the authority to change any jurisdictional power and cannot stop development, but only oversee the premitting process. CCAMP will initiate enforcement actions where needed. On the local level, CCAMP does not have power on direct zoning regulations other than the review requirements.

Basic Structure

The grant, under which CCAMP operates, is divided into four program areas: the local grants program, the technical assistance program, the monitoring program and the special projects program.

The local grants program provides the funding for the individual municipal coastal programs and their coastal site plan reviews. Grants for municipal coastal programs are available for up to three years. Their purpose is to provide

Coastal Area

63

Table 1. Coastal Municipalities

Stamford
Norwalk
Fairfield
Milford
Orange
New Haven
Branford
East Lyme
Clintor

revisions to the municipal plan of development, zoning classifications, and zoning regulations. Communities may adopt a municipal coastal program for the areas from the shoreline up to the mean high water mark.

The individual municipalities are responsible to develop their coastal goals and policies, which are based on the data obtained in assessing their resources and problem areas. The municipal coastal plan should address their problems and needs within the framework of existing conditions. The plan must be consistent with the goals and policies proposed by the Connecticut Coastal Management Act (CCMA).

Municipalities are asked to develop specific coastal policies to address their unique problems, issues and resources while still insuring that state policies are also addressed in their coastal programs.

The grants for local coastal site plan reviews, the mandatory regulatory component of the program at the local level, assures consistency with the CCMA coastal policies and current zoning classifications.

Local implementation of the state criteria occurs through administration of a new coastal site plan review process performed by existing local planning and zoning commissions. Each land development project must have approval by the municipal planning and zoning officials. Specifically, coastal site plans are reviewed to determine whether or not the proposed activity is consistent with all applicable coastal policies established in the CCMA, the proposed activity incorporates all reasonable measures to mitigate adverse impacts on coastal resources and future water dependent development opportunities, and any unmitigated adverse impacts of the proposed activity on coastal resources and any future water dependent development opportunities are acceptable.

State agencies are subjects to the same permitting requirements as private development. The federal consistency provisions of the Federal Coastal Zone Management Act also guarantee that any federal agency's actions undertaken in the coastal zone will be consistent to the maximum extent practicable with the provisions of that states' approved coastal management program.

The Coastal Area Management's technical assistance program best serves the municipalities by being the central source of information and expertise on coastal resources, issues, problems and needs. This program is utilized by both state and local agencies which develop coastal management policies.

The Coastal Area Management Program officials work closely with the personnel from Connecticut's Coastal Municipalities. For each of the state's 36 coastal communities there is a CCAMP staff member with the specific responsibility to service that locality. In each coastal area with a program, there is an individual who serves as the local contact with CCAMP. Usually there is a staff behind this person, which carries out the local plan. For each locality that a CAM staff member is responsible for, they monitor for municipal notices, meeting agendas, hearing records, permits of state and local regulatory agencies, environmental impact statements and Connecticut Environmental Policy Act (CEPA & NEPA) statements for publically funded projects within the coastal area. This is done by scanning all major coastal daily and weekly newspapers for relevant news articles and legal notices; periodic aerial overflights of the coast and prompt follow up on citizen complaints. Local municipalities also report periodically to CAM about their activities. Together they keep tabs on any activity effecting landuse in the coastal area.

The Coastal Area Management Program staff members assist their municipal contact personnel by reviewing their permit applications for consistency with CCMA coastal policies, prior to permit issuance. Staff members also conduct field reviews on projects, assist in the planning stages of municipal coastal programs, and participate in state and municipal workshops on program implementations and the preparation of implementation materials.

Technical assistance would also include maps and other information concerning the location and condition of coastal resources and background information on the beneficial and adverse impacts of various types of development on coastal resources.

If resistance to sound coastal area management or flouting of existing zoning regulations is discovered, CCAMP can step in either to negotiate or to bring legal action against offenders.

Both the environment and Connecticut's economy are taken into consideration and final decisions are made at the local level.

Program monitoring is another important responsibility of CAM. CAM is required to continuously monitor program compliance of the state and local planning and regulatory programs in accordance with Connecticut's federal approved program. This ensures consistency with the goals and objectives of the state's program.

Special projects are conducted by CAM to continue to develop and strengthen the coastal management program. These projects benefit all the shoreline communities in Connecticut.

The main purpose of these special projects are to restore the natural habitat of Connecticut shoreline while providing practicable limitations to human development. Research may be conducted on special projects of particular concern to establish new solutions to old problems.

The special projects under study by CAM includes the development of a management plan to restore a degraded wildlife area; the coordination of a beach restoration and erosion control project; the development of plans for improving public access on selected state-owned coastal properties; funding assistance for urban water front planning, design, and demonstration projects; continuation of federal and state coastal regulatory permit program simplification; and the second year to development for a comprehensive living marine resource strategy for Connecticut.

Basic Structure Summary

The coordination, at the genesis of the municipal coastal program and state coastal management program, has been able to establish goals and policies that are consistent at both levels of government. This consistency will add predictability to the review process by providing for a planning based on coastal resource management and by making municipal zoning and related ordinances consistent with long range management objectives. This accomplishes CAM's goal of creating a partnership among local, state, and federal agencies which avoids all the conflicts and overlapping efforts.

The development of a municipal coastal management program is purely voluntary and in areas where no program is in use, private and public developers still must get the same approvals. This is done without the detailed guidance of a well thought out long range plan.

Connecticut's coastal program allows rural municipalities to direct most of their attention to growth related issues and urban municipalities to port development i.e., dredging and expansion of energy receiving and storage facilities.

Sunset Review

The Legislative Program Review and Investigations Committee, Sunset Review Committee), a statutory committee of the Connecticut General Assembly, evaluated the efficiency and effectiveness of Connecticut's Coastal Management Program in 1983. Although the program had only been in effect for 2½ years, the Sunset Review Committee judged the program's progress toward full implementation of the law on both the state and municipal levels. The Sunset Review Committee also measured the extent of community support for the program.

The Legislative Program Review and Investigations Committee recommended the continuation of the Connecticut Coastal Management Program. The committee found that the staff from the Department of Environmental Protection have performed their tasks necessary to ensure that development in the coastal area occurs in a planned thoughtful manner. The committee also believes that support that the legislation has gained as a vehicle for serving the public interest with respect to proper development, preservation and use of land and water resources in the coastal area is justified. The Committee has placed a 1993 data as the next time Connecticut's Coastal Management Program would be reviewed.

Funding

Public Act 79-535 included a \$250,000 state appropriation to be used by the Department of Environmental Protection to assist coastal municipalities in carrying out their responsibilities under the act and to obtain federal matching funds. The towns were eligible for initial \$2,500 grants, which all but two towns accepted.

Since federal approval of the Connecticut Coastal Management Program on September 1980, annual federal grants have been available to the municipalities. Originally, the grants were made by the Department of Environmental Protection based on a statutory formula that took into consideration such factors as: the area, length of shorefront population and development pressures within the town's coastal boundary;

the nature of the municipality's coastal resources and coastal-related problems; the capacity and commitment of the town to carry out the purposes of the act; and the number of coastal site plan reviews being conducted. Actual experience with the program during FY 1980-81 made it clear that in some cases the grants were larger than necessary while in other towns additional funding was needed.

Grant awards the past two years have been modified so the funding more closely matches the program needs of the individual municipalities. Grant awards the first year ranged from \$2,000 to \$40,000.

Additional funds have been awarded to some coastal towns to cover special studies. The grants are to be used to refine the municipality's coastal program or to deal with a problem common to several towns. Two towns received special study grant awards in FY 1980-81. The following year more money was available for such grants because of a reduced demand for general grants, so all towns received awards.

The State of Connecticut has received federal grants of more than \$1.3million annually for the past three years. Table II-1 provides a breakdown of the Department of Environmental Protection's budget for these years. The budget year for the coastal program runs from September to September because the federal grants are distributed just before the close of the federal fiscal year.

Problems

Through the three years of institutionalism, the Coastal Area Program at the local levels has been able to provide programs developed around a central coordination system and stayed consistent with all the state's goals and objectives. There has been only one case where a municipal program faced strong opposition by its community.

The amendment changes proposed by the Sunset Review Committee and the General Assembly are shown in Appendix A.

Table II-1. Department of Environmental Protection Budget--
Coastal Management Program.

	<u>Sept. 1980- Sept. 1981</u>	<u>Sept. 1981- Sept. 1982</u>	<u>Sept. 1982- Sept. 1983</u>
Personnel	\$407,617	\$406,306	\$499,682
Fringe	116,415	135,706	170,890
Travel	5,700	3,500	4,500
Equipment	17,820	5,000	2,000
Supplies	2,000	2,000	1,000
Contractual ¹	849,000	843,055	526,700
Other	<u>106,903</u>	<u>45,800</u>	<u>44,300</u>
Total Direct Charges	\$1,505,455	\$1,441,367	\$1,249,072
Indirect Charges	<u>137,367</u>	<u>95,076</u>	<u>101,935</u>
TOTAL ²	\$1,642,822	\$1,536,443	\$1,351,007

¹More than three-quarters of these funds are given to the coastal municipalities for use in their performance of coastal area management functions.

²Between \$312,000 and \$343,000 annually is state money; the remainder is federal support.

Source: Department of Environmental Protection.

Appendix A

Summary of 1983 Amendments to the Connecticut Coastal Management Act (CGS Sections 22a-90 through 22a-114)

During the 1983 session of the Connecticut General Assembly, several bills were passed which amend the Connecticut Coastal Management Act (CCMA). Summaries of the amendments follow.

- *A. "An Act Concerning the Sunset Review and the Reestablishment of Termination of Certain Governmental Entities."
(Substitute Senate Bill No. 1116)

"An Act Concerning Performance Audits of State Agency Programs" (Substitute Senate Bill No. 744 as Amended by House Amendment Schedule "A").

Together these acts conclude the legislative sunset review process for the CCMA which began during the summer of 1982. These two "sunset" acts make the following changes:

1. Reauthorize the CCMA for 10 years extending the termination/reestablishment date from July 1, 1983 to July 1, 1993.
2. Amend section 22a-90 to indicate that the short title "The Coastal Management Act" applies to sections 22a-90 through 22a-114 inclusive (rather than through section 22a-96 as incorrectly referenced).

- **B. "An Act Concerning the Coastal Area Management Act."
(Public Act 83-525)

1. Amends the state implementation sections of the Act in sections 22a-98 and 22a-100 to make the standards for state action consistent with the standards for local action with respect to adverse impacts on coastal resources and future water dependent development activities.
2. Amends the coastal site plan review procedures in section 22a-105 of the Act to provide for the "automatic" denial of a coastal site plan in the event that a municipal board or commission fails to render a decision within the statutory time limits.
3. Amends the municipal coastal site plan review exemptions in sections 22a-109(b) to clarify that

the word "on-premise" refers to all of the structures listed, not just fences.

4. Amends the municipal coastal site plan review exemptions in section 22a-109(b) to require a coastal site plan review for the construction of single family residences on islands not connected to the mainland by a road.
5. Amends the coastal site plan review procedures in section 22a-109(d) to require that zoning boards and commissions publish a notice of decision for a coastal site plan approval under that section of the Act.
6. Amends the coastal site plan review procedures in section 22a-109(e) to make the time limits for rendering a decision under that section of the Act consistent with the time limits for other zoning actions when a public hearing is held. (i.e. 65 days to hold a hearing plus 30 days to conduct a hearing plus 65 days to make a decision, with extensions allowed.)

****C. "An Act Concerning Zone Changes in Coastal Areas"**
(Public Act 83-287)

1. Amends the municipal coastal program procedures in section 22a-102 to make it clear that the criteria in that section apply to proposed changes to zoning regulations and other municipal coastal regulations in addition to proposed changes to plans of development.
2. Amends the municipal coastal program implementation procedures in section 22a-104 to require that proposed changes to plans of development and zoning regulations affecting the area within the coastal boundary for non-MCP towns also be consistent with the policies of the CCMA and to require that such proposed changes be forwarded to the Commissioner of DEP for an advisory review at least 35 days prior to the public hearing on the change. This section also sets the same 35 day time requirement for MCP towns and drops the requirement that DEP be notified of proposed changes to "Other" coastal regulations and ordinances listed in section 22a-101(b)(2) once the municipal coastal program has been completed. (Note: The requirement in section 22a-103(b) that DEP be

notitfied of proposed changes to "other" coastal regulations and ordinances pursuant to the development of a municipal coastal program remains in effect.)

3. Amends the DEP authorities in section 22a-110 to give the Commissioner the authority to appeal or otherwise appear as a party to a municipal decision concerning any change to a municipal plan of development or zoning regulation that affects the area withing the coastal boundary.

*D. "An Act Adopting the Revisor's Technical Corrections to the General Statutes." (Substitue Senate Bill No. 1146 as Amended by Senate Amendment Schedule "A" and House Amendements Schedules "A" and "B")

1. Amends the definition in section 22a-93(14)(E) to make a technical change to reference the Federal Clean Air Act rather that the Federal Clean Water Act.

* Denotes acts that go into effect July 1, 1983.

** Denotes acts that go into effect on October 1, 1983.

UPDATE

section 1: Gypsy Moth

The gypsy moth, *Porthetria dispar*, is one of the most infamous defoliation insects in the northeastern United States. Since 1905 millions of dollars have been spent trying to control gypsy moth populations and retard its dispersal. In the early third of this century the gypsy moth was confined to New England state, but today gypsy moth defoliation is far more widespread.

The 1982 gypsy moth defoliation was 50% less than in 1981. Areas hit hardest were the Eastern part of the state consisting of the New London, Tolland, Hartford, and Windham counties.

Cold spring weather put the moths a week to ten days behind last years schedule. West of the Connecticut River population collapse was due to exhaustion of the food supply and an increase in natural predators. The population was low this year due to a virus called nucleopolyedrosis. Another drop in population should occur next spring as the cycle of boom and bust larvae populations approaches a bust period. Prediction for 1983 defoliation figures are obtained by counting the number of egg masses left behind from this years infestation.

Towns in Tolland county suffered the heaviest damage with more than half the damaged acres sustaining 75% or more defoliation. Hartford county had a 25-50% defoliation. Greenwich and Stamford were the only Fairfield counties that had heavy defoliation this year for no apparent reason.

Non-insecticidal, as well as insecticidal control programs have been use to limit the detrimental effects of the gypsy moth.

The areiral application of any pesticide in Connecticut requires a permit from the Department of Environmental Protection. So far this year, some 114 towns, individuals, or businesses have obtained permits. The aerial spraying ban of chemical poisons makes Connecticut ineligible for federal aid in the fight against the catipillars. The State has no funds for use of the direct application of pesticides on private lands, but the General Status has provided \$37,500 for the reimbursement of municipalities for the cost of emergency spraying. This year 30 towns meet the preliminary requirments, filed a spray plan with the DEP and will be eligible for reimbursement until the funds are exhausted.

In order for aerial spraying to be allowed, written release must be obtained from any property owner within 300 feet of the flight path of an airplane (200 feet for a helicopter), and no aerial application can be made to a tract of land less than 10 acres. This reduces the chance of drift of pesticides into neighboring properties.

The State did no aerial spraying of its own except for a 480 acre experimental plot in Lyme that the Connecticut Agricultural Experimental Station, in cooperation with the DEP, is using to test control methods.

One of the most widely used biological insecticides Bacellus thuringiensis (Bt), a spore forming bacterium, creates a poison crystal that paralyzes the gut of a caterpillar after it is ingested. Bt seems to be harmless to plants, animals, humans, bees and beneficial insects. Bt is effective when it is used correctly, but precise timing is essential to its effectiveness. Bt works well when applied during the first three larvae stages and when the foliage to which it is sprayed has at least 50% development. The bacterium deteriorates rapidly and is only effective for 10-14 days. For this reason two applications or one application of high dosage is necessary to control gypsy moth populations. Normally 60-70% of the caterpillars are killed. Bt is ineffective on small infestations and large ones of over 5,000 egg masses.

Bt has been aerial sprayed over 11,000 acres on Connecticut land at the land owners own expense. Bt is the only pesticide registered for aerial spraying in Connecticut.

The Nucleopolyhedrosis virus (NPV), attacks the internal tissues of caterpillars causing them to die within two hours after ingestion of the virus. Like Bt, NPV should be applied twice during the first and second stages of larvae development. It is not harmful to animals, plants, or beneficial insects. NPV is a natural part of the forest ecosystem and is often the main cause of a sudden collapse of dense gypsy moth populations.

Chemical insecticides such as Carbaryl, Trichlorfon, and Acephate are also used to kill gypsy moths.

The insecticide Carbaryl (Sevin), has gained much controversy this year. This insecticide is preferred over other chemical and organic insecticides because it kills the gypsy moth within minutes, only one application is needed, and it cost less to use. The controversy arises due to the fact that Sevin kills other types of insects besides caterpillars, last one week to ten days before it breaks down, complex chemicals form when it breaks down- these may last in the environment and be toxic themselves, significant exposure

can cause headaches, dizziness, eye stomach or respiratory problems, it is a suspected cancer-causing agent, causes birth defects in laboratory animals, and it was linked to 22 of 26 massive honeybee kills reported by beekeepers this year.

Aerial spraying of Sevin is not allowed for private lands, although ground spraying is allowed. However some minor aerial spraying using Sevin is allowed on agricultural land and nurseries.

Other means of control of the caterpillar are by natural or introduced predators. The tachinid fly along with certain wasp species parasitize the gypsy moth and are useful in the moth's control. Some of these insect species have been introduced from Europe and Africa.

A question that arises when trying to make a management decision about the gypsy moth is, should the gypsy moth be controlled or should we let the forest ecosystem change so that it can reach an equilibrium with the gypsy moth? In areas such as the northeast, where almost all the forest has economic or recreational value, the control of the gypsy moth is essential. Some foresters feel that spraying is too costly and would prefer to salvage their oak. They feel defeated by the gypsy moth and believe that the economic market will open for red maple and other hardwood species. Each manager has to make this decision for themselves, however, the value of oak seems to outweigh the cost of spraying for many.

Presently, the prediction of gypsy moth infestation seem to be based almost entirely on the intuition of forest managers. Techniques such as counting egg masses are helpful in predicting an infestation, but more work is needed in this area. Still, an effort should be made to predict major infestations, so that control plans can be made well before the first eggs hatch. This is necessary because timing of spraying is crucial to the control of the gypsy moth.

The control of the gypsy moth's dispersal is as important as the control of immediate infestations. Establishment of a control zone on the outskirts of an infested area will not prevent the spread of gypsy moths, but it should serve to slow their expansion until science finds an effective way of dealing with the pest.

Current efforts in forest science are directed toward the control, rather than the eradication of the gypsy moth. One such study looks at the effects of planting conifer species on ridgetops in order to retard the spread of the gypsy moth. Another attempts to isolate why the gypsy moth leaves ash, tulip popular, and red maple notably free of injury while other

species such as oak is attacked.

There is still much to be learned about the gypsy moth. One looks to the future for cheaper more effective ways to control the pest.

section 2: Legislation 1982

Special Act 82-53, AN ACT ESTABLISHING A COMMISSION TO STUDY HANDLING FEES FOR BEVERAGE CONTAINERS.

A commission has been established by Special Act 82-53 in order to conduct a study of handling fees for beverage containers. Included in the areass to be examined are handling fees for returnable containers, the cost of returnables to distributors, the cost of returnables to retailers, unredeemed deposits, beer prices and affirmation, protected territory for beer distributors, redemption centers nad their viability, and the effect of all of these things on the elimination of minimum markup.

The commission consists of 17 members including members of the General Assembly who are cognizant of environmental matters, general law, finance, revenue and bonding, two representatives of a food store association, one representative of a beer wholesalers organization, one representative of a soft drink association, and one representative of a package store association.

Public Act 82-151, AN ACT CONCERNING WASTE OIL.

Public Act 82-151 adds definition of oil and petroleum to chapter 474a, Water Pollution Control. Chemical liquids, hazardous waste, solid liquid or gaseous products and waste oil are also defined in an effort to specify frobidden discharges or untreated wastes which might find their way into the waters of the state.

Also, no person shall engage in the collecting, storing or treating of waste oil or petroleum or chemical or hazardous wastes as a principal business without a permit from the DEP commissioner. Such permit was valid for not more than one year, but is now valid for a fixed term not to exceed five years. The commissioner has been given the right, under P.A. 82-151 to suspend or revoke any such permit.

Public Act 82-240, AN ACT CONCERNING ORDERS BY THE COMMISSIONER OF ENVIRONMENTAL PROTECTION TO PROVIDE POTABLE DRINKING WATER.

Under P.A. 82-140, if the commissioner of the Department of Environmental Protection determines that pollution of groundwaters has occurred or can be reasonably expected to occur, and that such a condition renders the groundwater unfit

to drink-- not usable for potable drinking water-- he may issue an order to the person or municipality responsible for the pollution to provide potable drinking water to persons affected.

If more than one person or municipality is found to be responsible for the pollution, the commissioner may apportion the responsibility for supplying drinking water.

If the commissioner is unable to determine responsibility for the water pollution, or if the responsible persons, as determined by the commissioner, have no assets, the municipality wherein the groundwaters are unusable for potable drinking water may supply suitable water and may apply to the commissioner for "grants from any funds established for such purpose". There is no such grant fund established by P.A. 82-240.

Each order of the Commissioner made under P.A. 82-240 shall include a time schedule for the accomplishment of the steps leading to the provision of potable drinking water.

The DEP Commissioner with the Commissioner of health services shall review and approve the system or method proposed to provide potable drinking water to persons affected by such groundwater pollution.

In an order to provide potable drinking water is issued by the Commissioner to a municipality, such an order shall not affect the rights of the municipality to institute suit to recover all damages and expenses incurred from any responsible party. Also, P.A. 82-240 does not limit the liability of any person or municipality which renders groundwaters unusable for potable drinking water from suit for damages by anyone who relied upon such groundwaters for drinking water prior to the determination of pollution.

Any order issued under the provisions of P.A. 82-240 shall be subject to the rights of any aggrieved person or municipality to a hearing before the Commissioner, and to appeal from the final determination of the Commissioner to the superior court. Request for hearing or appeal shall not stay the Commissioner from requesting an injunction.

Public Act 82-250, AN ACT CONCERNING COASTAL MANAGEMENT

Part of the state's coastal management legislation has been amended by P.A. 82-250 to include new definition sections:

"Adverse impacts of future water dependent development opportunities" include, but are not limited to, locating a non-water dependent use at a site that is a) physically suited for a water dependent use for which there is considerable demand, or b) has already been identified for water dependent use in a plan of development, c) replacement of a water dependent use with a non-water dependent use, or siting of a non-water dependent use which would reduce or inhibit existing public access to marine or tidal waters.

Subdivisions and applications for variances are included in the list of "coastal site plans" under P.A. 82-250, and the commissioner of environmental protection is enabled by the act to request the attorney general to institute proceedings to enjoin or abate public nuisances in coastal management areas.

Interior modifications to buildings and minor changes in the use of structures or property except those adjacent to coastal waters can be exempted from coastal site plan review requirements.

Public Act 82-255, AN ACT CONCERNING VIOLATIONS OR REGULATIONS ON STATE PARK, PUBLIC HUNTING AND FISHING LANDS AND WATERS AND SPORT FISHING REGULATIONS IN THE MARINE DISTRICT

Public Act 82-255 raises the maximum penalty for violation of regulations designed to protect state parks and forests to \$95 from \$50. In addition, the act gives the Commissioner of the DEP the right to prohibit any violators from entering any state park for not more than one year.

The act also states that anyone who violates any regulation covering public hunting and fishing lands and waters shall be guilty of an infraction and that person may pay the fine (not more than \$100) by mail or may plead not guilty.

Those convicted of a violation of the fisheries and game regulations (Chapter 490) may now lose their licenses for not less than 30 days for a first offense, raised by P.A. 82-255 from 15 days. The DEP commissioner has also been given the right to suspend any permit, license or registration and the right to obtain any permit for not more than two years for the second offense. The commissioner can deny any permit for not more than three years for the third offense, except in the case of jacklighting for deer, in which case the commissioner can suspend any permit or right to obtain any permit indefinitely.

Any person who violates any regulation concerning sport fishing in the marine district shall have committed an infraction and may pay the fine by mail or may plead not guilty.

Finally, upon suspension of a license, permit or registration issued under the Fisheries and Game Laws (Chapter 490) all other licenses and the right to obtain them issued under Chapter 490 may be suspended.

Public Act 82-296, AN ACT CONCERNING THE PRESERVATION OF THE UPPER CONNECTICUT RIVER AREA.

The provisions of P.A. 82-296 were adopted to preserve the unique scenic, hydrologic, ecological, agricultural, recreational and historic values of the upper Connecticut River and the towns abutting the river. The act seeks to regulate land use along the river.

The act seeks to protect and improve water quality of the river; to preserve the river's flood storage capacity; to preserve the natural, historic and scenic areas and natural topography of the riverfront land; to preserve and encourage agricultural land uses which conserve the area's soil and water resources and maintain and increase the area's long-term food-producing capacity; to promote the area's recreational potential; to influence the visual impacts of riverfront development; and, finally, to encourage preservation and rehabilitation of the Connecticut River greenbelt.

The towns of Middletown, East Hampton, Portland, Cromwell, Glastonbury, Rocky Hill, Wethersfield, Hartford, East Hartford, Windsor, South Windsor, Windsor Locks, East Windsor, Suffield, and Enfield are required to comply with the provisions of P.A. 82-296. Lands in those towns are part of the "conservation zone" created by the act.

A Connecticut River Assembly is created by the act and that assembly is comprised of the governor or his designee and one alternate member as well as one member and one alternate from each of the affected municipalities. Other members of the assembly include delegates from the Capitol Region Council of Governments and the Midstate Regional Planning Agency.

Any municipality may withdraw from the assembly after a public hearing and local legislative vote, and one year after such withdrawal, the provisions of the act shall cease to apply to that municipality. Municipalities may rejoin after local vote.

The Connecticut River Assembly may employ expert assistance and it may accept funds. It must report to the General Assembly on or before February 15th annually on its activities and finances.

Public Act 82-296 mandates that whenever a municipality receives an application for any of the land uses outlined in the act for land located in the conservation zone, a copy of that application must be forwarded to the Connecticut River Assembly for review.

Land uses outlined in the act range from any use of land for commercial, business, retail or office use which requires land area of more than 7.5 contiguous acres, or a zone change of more than 7.5 contiguous acres, or a building floor area of more than 75,000 square feet, to a project of a public service company for proposed land use of 10 acres or more. It includes oil refineries, bridges, dams, electric transmission lines, soil and earth removal, municipal uses, and parking areas for more than 100 cars.

The Connecticut River Assembly serves in an advisory role. Although its comments on proposed land use within the stated conservation zone are only to be read into municipal records, a two-thirds vote of the local body acting on any application shall be required if the assembly's comments are negative.

Public Act 82-320, AN ACT CONCERNING A TAX ON GENERATORS OF HAZARDOUS WASTE.

Generators of hazardous waste who are required to file a manifest pursuant to the 1976 Resource Conservation and Recovery Act and pursuant to regulations adopted by the Department of Environmental Protection shall be assessed a fee of four cents per gallon of hazardous waste generated. The imposition and collection of such assessment shall terminate on December 31, 1985.

Each generator of hazardous waste subject to such assessment was required to submit a quarterly return accompanied by the quarterly assessment to the commissioner or revenue services beginning October 1, 1982. If the assessment is not paid when due, a penalty of ten percent of the amount due or \$50, whichever is greater, shall be added to the amount, and an interest rate of one and one-half percent per month shall be assessed until the fee is paid.

Revenue collected under P.A. 82-320 is deposited in the emergency spill response fund, a revolving fund set up to provide money for the containment and removal or mitigation of discharges, spillage, uncontrolled loss, seepage or filtration of oil, petroleum or chemical liquids, solids, gases or hazardous wastes.

The emergency spill response fund can also be used to provide funds for the provision of potable drinking water if any drinking water supplies or a municipality are contaminated.

Public Act 82-402, AN ACT CONCERNING WATER DIVERSION

Public Act 82-402, which took effect on July 1, 1982, declares that the diversion of waters in Connecticut shall be permitted only when such diversion is necessary, when it is compatible with long-range water resource planning, proper management and use of the water resources of the state, and when such diversion is consistent with Connecticut's policy or protecting its citizens against harmful interstate diversions.

Protection of water resources is declared a matter of legislative determination under P.A. 82-402.

Any person or municipality maintaining a water diversion prior to July 2, 1982 was required to register on or before July 1, 1983 with the Commissioner of Environmental Protection giving the location, capacity, frequency and rate of withdrawals or discharges of said diversion as well as a description of the water use and water system.

"Diversion" is defined as any activity which causes, allows, or results in the withdrawal from or the alteration, modification or diminution of the instantaneous flows of waters.

No person or municipality shall commence to divert water from the waters of the state without first obtaining a permit for such diversion from the DEP commissioner. Permits may not be transferred without written approval of the commissioner, and the permit application is required by law to include:

The need for the diversion, reasons for the diversion and planned use of the diverted water, a description of the existing water system, locations of withdrawals and discharges of water, quantity, frequency and rate of water proposed for diversion, length of time for which permit is sought, alternatives, conservation measures, and the effects of the proposed diversion on public water supplies, water quality, wastewater treatment needs, flood management, water-based recreation, wetland habitats, waste assimilation, agriculture, fish and wildlife, and low flow requirements.

Those applying for diversion permits must notify the chief executive officer of the town or towns of the diversion of their intent, and such intent must be published in a newspaper of general circulation in that area.

A public hearing shall be held on all diversion permit applications, and the governor, attorney general, house speaker, president pro tempore of the senate, the secretary of OPM, the chairperson of the DPUC, the commissioner of health services and economic development, and the chief executive officers of the affected municipality shall be notified of the public hearing.

Approval or disapproval of the application for diversion permit shall be rendered by the DEP commissioner within 120 days of the public hearing, including decisions on modifications or limitations, or the application shall be deemed granted.

The DEP commissioner may review any permitted diversion and may revoke a permit if he deems there is any violation of the permit terms.

Certain water diversions are exempt from the provisions of P.A. 82-402, including wells not exceeding a withdrawal of more than 50,000 gallons per 24-hour period, certain storm drainage systems, water for fire emergency purposes, diversions within water supply distribution systems, and roadway crossings or culverts which allow for the continuous flow or passage of an existing watercourse.

Public Act 82-460, AN ACT CONCERNING PRACTICES AND PROCEDURES WITHIN THE DEPARTMENT OF MOTOR VEHICLES.

Within this act that concerns motor vehicles, is a section relating to the vehicle emissions inspection.

Public Act 82-460 states that Section 14-464d of the General Statutes is repealed. That section provides for the commencement of motor vehicle emissions inspections commencing on December 31, 1982. That section also permits the motor vehicle commissioner to grant waivers from compliance standards for those vehicles which fail testing, and \$70 is prescribed as the reasonable cost of repairs to bring vehicles into compliance, excluding removed pollution control devices.

Public Act 82-460 does not provide any replacement for Section 14-464d.

section 3:: Legislation 1983

Public Act 83-430, AN ACT CONCERNING THE ASSESSMENT OF HAZARDOUS WASTE.

By law, generators of hazardous waste in Connecticut are taxed four cents per gallon of waste generated. Public Act 83-430 also taxes out-of-state generators of hazardous waste who ship waste to treatment and disposal facilities located in Connecticut.

In addition, the act establishes a tax of one-half cent per pound or eight dollars per cubic yard for wastes calculated in those measurements instead of gallons.

Finally, the act specifies that a generator paying an assessment is not liable to further assessment if the waste is stored or reshipped without change or treatment in the same container.

Public Act 83-432, AN ACT CONCERNING CLARIFICATION OF PAYMENT REQUIREMENTS AND DUE DATE FOR THE ASSESSMENT PAYABLE BY GENERATORS OF HAZARDOUS WASTE.

Existing law requires generators of hazardous waste to pay a tax of four cents per gallon on waste required to be documented under federal law. Previously, generators required to pay less than \$25 per year were exempt. Public Act 83-432 changes the exemption level to those generators paying less than \$5 per quarter.

The act also clarifies the quarterly payment procedure.

Public Act 83-572, AN ACT ESTABLISHING THE CONNECTICUT HAZARDOUS WASTE MANAGEMENT SERVICE.

A hazardous waste management service headed by on director from each of the state's six congressional districts is established by Public Act 83-572. The Board of Directors, appointed by the Governor for staggered four-year terms, will include two persons each from the scientific community, the general public and the business community.

The management service is charged with promoting and encouraging the safe management of hazardous waste in Connecticut. The group must prepare a hazardous waste generation estimate for the state through the year 2005. The estimate, which must be submitted to the General Assembly by January 1, 1984,

must be updated every five years. Included in the management service estimate must be a description of the state's treatment, storage and disposal capacity, plus the capacity which needs to be developed.

A management plan for the disposal of hazardous wastes in the state and an inventory of preferred sites for hazardous waste facilities must also be developed. Several areas must be considered during the development of the state's plan for disposal and inventory of sites. The plan must include an evaluation of: alternative disposal facilities, technologies and facility design and operating specifications; strategies, prospects and methods for developing disposal facilities; disposal objectives and the institutional mechanisms needed to meet them; and, environmental, social and economic effects of alternative facilities and technologies and the methods by which unavoidable adverse effects could be mitigated.

If no private sites have been established by 1986, the service is authorized to acquire, construct or finance hazardous waste facilities, which must comply with Connecticut's hazardous waste siting laws.

The new hazardous waste management service may employ staff exempt from civil service requirements; may establish office; may retain consultants; may sue and be sued; may adopt bylaws and regulations; may conduct investigations and hearings; may obtain records, through subpoena if necessary; may charge user fees; and, may purchase or lease real and personal property.

In the course of carrying out its duties, the hazardous waste management service must consult with the Commissioner of Environmental Protection and the Chairman of the Connecticut Siting Council, in addition to the private waste management industry and hazardous waste generators.

section 4: New DEP Positions

Two new positions have been added to the staffing of the Department of Environmental Protection. The DEP now has an Assistant Deputy Commissioner and an environmental protection Director of Local Assistance and Program Coordination.

The Director of Local Assistance and Program Coordination will work under the direct supervision of the Deputy Commissioner for the Environmental Quality Division of the DEP. He will promote the development and implementation of local environmental protection programs and he will coordinate state and local programs to ensure their conformity and consistency. This director will manage the delegation of authority that the DEP allocates to local government. He will also coordinate permit requirements and other required approvals for local economic development and local planning.

Programs and policies within the DEP as the department relates to local governments, assistance to citizen advisory groups, and training programs, seminars, and workshops for municipalities will all be under the jurisdiction of the Environmental Protection Director of Local Assistance and Program Coordination.

The second new position that the Department of Environmental Protection has is an Assistant Deputy Commissioner. This position was established by the Senior executive service professional management program. The Assistant Deputy Commissioner will serve under the Deputy Commissioner of the Division of Environmental Quality and will be responsible for the Air Compliance, Water Compliance, Solid Waste and Hazardous Materials Management Unit.

The primary function of this new position will be to: coordinate unit activities; assure that all staff efforts are directed toward the achievement of department goals; assure the effective conduct of on-going programs and timely responses to immediate pollution problems; provide for consistency in policy development and decisions; administer the state/EPA agreement; and provide for the most efficient possible use of all available resources.

APPENDIX

Appendix A: Development of the Environmental Impact Statement Requirements by NEPA

The National Environmental Policy Act (NEPA) was passed in 1969, amid Congressional concerns about the deteriorating quality of the nation's environment. Section 102 of the Act was passed to force federal agencies to consider the effect that their actions would have on the quality of the human environment. Under Section 102(c) agencies are required to prepare environmental impact statement (EIS) for each proposal for a major federal action significantly affecting the quality of the human environment.

It soon became clear to the courts that the language of the statute needed interpretation in order to effect Congress's intent in passing the Act. Two problems arose with respect to the EIS requirement that will be considered here. At what point in time during the development of a proposal is an EIS required to be prepared and what should be the scope of, or range of actions considered in, an EIS on a federal project? The cases discussed here were brought by environmentalists and others who were concerned that the intent of the law was not being complied with because agencies (1) were not integrating environmental concerns into the actual planning process and (2) agencies were artificially segmenting their proposals into smaller projects so that more comprehensive evaluations would not be required. The first concern is known as the "timing" issue. The second involves distinctions between "site-specific" versus "programmatic" environment impact statements.

Early attempts at resolving these problems by the courts developed an approach that effected the intent of the law.

Kleppe v. Sierra Club, The U.S. Supreme Court overruled the approaches the early courts took. The early decisions have been somewhat rehabilitated by the new CEQ regulations and, despite the Kleppe decision, remain useful illustrations of what the law can be expected to be under future interpretations of the regulations.

Early Cases

Soon after NEPA was passed, the courts were forced to apply the EIS requirement of NEPA, Section 102 of the Act, did not fit neatly into what was called a "proposal" for a major federal action significantly affecting the quality of the human environment.

Early attempts by the lower courts were slightly confused and inconsistent at worst, but also indicated a judicial willingness to enforce the intent of the Act.

Before the Kleppe decision, then, the courts had developed an independent utility test and a four-point test. While each test appears to apply to a separate aspect of the EIS problem-- one to scope and one to timing, the courts's applications of these tests in the early cases do not clearly distinguish the two different problems; hence the common view that the decisions were confused and inconsistent. It was probably with an eye toward establishing a more uniform statement of how to comply with the EIS requirement of NEPA that the Supreme Court decided Kleppe v. Sierra Club, in 1976.

Between 1972 and 1976 federal district courts and circuit courts of appeal developed two tests to determine whether a government program should be considered a "proposal". Programs that were "proposals" would fall under the NEPA Section 102 environmental impact statement requirement. In three cases involving federal highway projects, the courts were faced with deciding what stretch of highway is the proper mileage to evaluate in an EIS. The courts were aware that, given the piecemeal fashion in which highways are often constructed, there was ample opportunity for officials to "fractionalize" or artificially divide up a highway project into much smaller segments. These segments evaluated separately, would appear to have a less significant impact than the entire highway. The same problem, in slightly different form arose concerning mid-Western water resource projects which involved construction of separate dams and diversions, etc. In response, the courts developed an "independent utility test". This test meant that if a proposed segment of a project could be said to have independent utility, the scope of the EIS could be limited to that segment. In highway cases, the practical effect was that if the ends of a segment were at major termini, the segment would be considered independent. In water resource cases, the individual parts of a larger plan were considered independent unless the project was only useful together with the other parts of the project.

The U.S. Court of Appeals for the District of Columbia, the federal appeals court for the capital district, dealt with the question of when during the development of a "proposal" an EIS should be prepared, which involved many of the same considerations as the segmentation decisions. It announced a "four-point balancing test" which was eventually appealed to the U.S. Supreme Court where the test was overruled in

the landmark case of U.S. v. Kleppe in 1976. The four point test, which enumerated the considerations to be balanced against each other before a court should decide at what point an EIS should be prepared, was as follows:

- 1) How likely is the program to come to fruition, and how soon will that occur?
- 2) To what extent is meaningful information presently available on the effects of implementation of the program, and of alternatives and their effects?
- 3) To what extent are irretrievable commitments being made and options precluded as refinement of the proposal progresses?
- 4) How severe will the environmental effects be if the program is implemented?

The Supreme Court

The U.S. Supreme Court in Kleppe in 1976 addressed directly the use of the four-point balancing test. The Act requires that an EIS accompany any "proposal" and it is the question of what, for practical purposes, constitutes a "proposal" that the lower courts had struggled with. Rather than confronting the term's vagueness or attempting to reconcile the statute's language with Congressional intent, the Supreme Court focused on the section's explicit language and insisted that its literal meaning controlled.

In Kleppe a proposal for a national coal leasing program and individual local proposals had each been accompanied by environmental impact statements. The plaintiff Sierra Club contended, however, that the Department of Interior also had a de facto proposal for that entire midwestern region. They pointed to regional feasibility studies as indications that a regional program was actually planned. The court held that there was no formal "proposal" for a regional coal-leasing program and thus the Sierra Club's claim that a regional EIS was required was denied.

The Court relied on a 1975 decision which held that under NEPA an EIS was to accompany the written, formal proposal for agency action. Any other judicial interpretation departure from the statutory language. Thus, the Kleppe decision seemed to say that a court, when deciding whether an EIS is required under the statute, should only look at whether the federal agency has explicitly described a program in a formal document called a "proposal". It has been suggested that this preclusion of judicial consideration of unofficial programs not set out in formal proposals will encourage agencies wishing to avoid compliance with the EIS process to plan informally and not file written proposals. A survey of the cases since 1976 followed this strict interpretation dictated by Kleppe.

The Court did concede, with regard to the interrelated projects that an agency must prepare a broad program EIS when several formal proposals pending concurrently before an agency will have a cumulative or synergistic environmental impact. Importantly, however, the Court applied a legal test called the "arbitrary and capricious standard" to agencies' decisions on whether the proposed actions have sufficiently cumulative effect to require preparation of a program EIS. Thus, it cannot be expected that an already reluctant agency would, after Kleppe, be inclined to scrutinize the cumulative effects of even its formal proposals. Scrutinization of concurrent but informal or de facto programs, on the other hand, is precluded by the language of the Supreme Court in Kleppe. The Court held in Kleppe that the Department of Interior's proposed actions in the region concerned were not cumulative enough to have made the Department's failure to prepare a regional EIS an "arbitrary" action. It has been suggested that the Kleppe decision indicated that the Supreme Court is unwilling to develop standards regarding when a number of individual actions are to be considered in a single impact statement. However, the Court did seem to adopt a standard albeit easily complied with; whatever the agency decides is acceptable unless that decision is clearly arbitrary.

The cases following the Supreme Court's 1976 decision indicate that the Kleppe decision has been followed closely. A plan does not become a proposal until the time a formal written proposal is issued and the EIS is required only at such time. Interacting projects are not part of a larger "proposal" unless considered to be so by the agency making the individual project proposals. Their judgement in this matter will be overturned by the courts only where the agency has been arbitrary or capricious in its decision-making.

In the early cases, before Kleppe, the courts struggled with the tension between the language of the statute and Congress' intent in passing it. Since the intent of the law to force federal agencies to recognize the environmental effects of their actions and to consider ways in which they could mitigate negative environmental effects, the statute's requirement the EIS's accompany only a "proposal" seems inadequate. Federal agencies may not be required to in fact integrate environmental considerations into their decision-making if the language of the statute is taken literally. Thus, the courts developed two primary tests to effect the intent of the law, the independent utility test and the four-point balancing test. These tests were effectively invalidated by the Supreme Court in Kleppe.

The New Regulations

Between 1970 and 1979 there were CEQ Guidelines which provided guidance to federal agencies on when and how to prepare the EIS's required by NEPA. However, the Guidelines were merely advisory, not binding. The agencies were not required to adhere to these Guidelines in order to comply with NEPA.

In 1977, President Carter, in Executive Order 11991, authorized the CEQ to issue new regulations clarifying and simplifying procedures for the proper preparation of EIS's. These regulations are binding on all federal agencies and all agencies must conform their own EIS procedures to comply with the regulations. The Council is given authority to review each agency's procedures for compliance with NEPA and with the CEQ regulations before the procedures will be approved.

The new regulations require more of federal agencies than the strict construction of NEPA by the Kleppe Court. In fact, the regulations appear to directly contradict some of the language in Kleppe and return agency procedures to a standard or review something like the tests elucidated by the courts before the Kleppe decision. These new regulations, however, were recognized as valid by the U.S. Supreme Court in 1979 but there has yet to be any judicial interpretation of their application to a specific set of facts.

The regulations define the word "proposal" as used in the Act but this definition is not the one announced by the Supreme Court. In effect, a proposal exists at that point when an agency has a goal and is actively preparing to make a decision on the means to accomplish that goal, and when the effects of that decision can be meaningfully evaluated in an EIS. A decision may exist in fact as well as by agency declaration. In Kleppe and the cases following it, this type of scrutinization of the actual activities of an agency was viewed as an impermissible digression from the language of the statute. In order to effect these regulations however, the courts will now be required to recognize activities constituting de facto proposals, as they sometimes did before 1976.

These regulations, according to one commentator, attempt to force federal agencies to consider all important environmental impacts at some point in the decision-making process, but are not concerned with whether certain types of impacts should be considered in either broader (programmatic) or narrower (site specific) statements. The courts in the early cases seemed to be striving for precisely this result but

within the context of programmatic and site specific EIS's. The regulations have set out a more comprehensive scheme than the courts could have. They enface the Congressional goal that environmental impacts should be an important consideration in a federal agency's decision-making process.

Consider how similar the regulations' section on scope is to the independent utility test applied in some of the early cases. This section sets out three types of actions which should be considered when determing the scope of the EIS to be prepared. "Connected" actions for one should be discussed in the same EIS, and connected actions are actions which: (i) automatically trigger other actions which may require environmental impact statements, (ii) cannot or will not proceed unless other actions are taken previously or dimultaneously, or (iii) are interdependent parts of a larger action and depend on the larger action for their justidication. Actions with cumulative effects, secondly, should also be discussed in the same EIS, and it is the cumulative effects of the more general "actions" that must be evaluated together rather than the cumulative effects of narrowly defined concurrent "proposals". Also, actions similar with respect to timeing or geography should be evaluated in the same EIS under the regulations.

The U.S. Supreme Court of Appeals for the District of Columbia developed the four-point balancing test, discussed above, to decide the issue of when and EIS should be prepared. In 1976 the Supreme Court discouraged judicial inquiry into the factors enumerated by the court and required only that agencies attach the EIS to the formal proposal. The regulations recognize the importance of agency consideration of environmental impacts early in the decision-making process and introduce a requirement for a draft EIS and a later final EIS. The regulations define the phrase in Section 102 of NEPA "major federal action." Proposals for major federal action include adoption of official policy, adoption of formal plans, approval of specific projects and, most importantly, " a adoption of programs, such as group of concerted actions to implement a specific policy or plan," and "systematic and connected agency decisions allocating agency resources to implementing a specific statutory program or executive directive."

Taking the regulations' definition of a proposal as potentially "existing in fact as well as by formal declaration," together with the regulations' definition of what constitutes a major federal action, the CEQ regulations as a whole allow judicial inquiry into the timing issue and actually seem to invite judicial scrutiny of unofficial or unannounced proposals for major federal action. Though different from the four-

point test developed by the courts, the regulations seem at least as effective against agencies not complying with the intent of NEPA, that environmental effects be considered in the early planning stages of the project.

Appendix B: A Political Greenhouse Effect has Enveloped the Nation

Jeffrey H. Mills

Like many environmental issues, the problem of excessive atmospheric carbon dioxide has all the ingredients that lead to political inaction: faraway effects, no closely affected group, disputed models and little public awareness.

The report on the greenhouse effect by the U.S. Environmental Protection agency and the National Academy of Sciences may have heightened public awareness of the issue, but they won't lead to significant political response. The problem, like similar issues, is subject to a "political greenhouse effect": It is absorbed into the political system and no policy is emitted outward.

The report did not break much new ground. Scientists like George Woodwell of Woods Hole, Mass., have issued warnings for years about the potential dangers to agricultural, aquatic and social systems posed by release of carbon dioxide from fossil fuel consumption and deforestation. The conclusions of these recent reports, however, are interesting. Though the EPA study expresses a greater urgency than the academy's, neither advocates trying to prevent climatic change. Both say, in effect, let's adapt to the inevitable.

The CO² dilemma has been transformed by years of selective inattention from a debate about the wisdom of altering the global climate to a debate about timetable for building bulkheads, planning new building sites and developing new irrigation technology.

This adaptive approach is how we deal with many environmental issues. Rather than prevent environmental damage before it occurs, modern society opts to adapt to the changes it has produced, seeking repair only when the problem reaches a crisis stage or when it is politically imperative to do so.

The reasons we do this are complex but essentially, it appears that our society cannot be deeply committed to economic growth and environmental protection at the same time.

The degree of compromise depends largely on the political strength of competing interests. On this scale, economic interests outweigh environmental ones. Although national polls show that a majority of people favor a healthy environment, this desired does not yet have the political strength to challenge economic growth. (This trend is slowly changing with politically active environmental groups, such as Sierra Club).

Part of the difficulty in preventing environmental harm stems from the complexities and uncertainties involved. We spend millions of dollars trying to understand a phenomenon like acid rain. Yet after years of research the dynamics of acidic precipitation still defy description. The end result of virtually all environmental-related research is that more research is needed.

Does this mean that we should not use the fundamental information of science in policy-making until the evidence is conclusive? Politics operates in vague scientific terms all the time, and must. The world is too complicated for exhaustive description.

These complexities and uncertainties delay decision-making until a crisis atmosphere is generated. This is bad news for the CO² dilemma because the greenhouse effect, like the acid rain problem, is essentially a non-event. Climatic change will occur everywhere, with varying effects, and will be spread out over several years. There will be no sudden death of crops or submergence of a coastal city to attract public attention and encourage government action. Adaptations will be slow in coming.

Scientists concerned with CO² buildup have urged the development of energy sources other than fossil fuels. Thus, the greenhouse effect has often been presented as a coal vs. nuclear power issue. Yet it is much more.

At the core is energy policy and the challenge to agriculture and coastal management. The problem also involves broader questions of employment and economic progress, population and land use, pollution and technology. American politics are not equipped for managing such multidimensional problems. Issues which demand hard choices between conflicting ways of life pose great challenges to any political system.

Because of the complexity of environmental problems and the conflict between public goals, the political greenhouse effect prevails. It seems to be a theme of modernity that we treat symptoms rather than causes, both in personal and environmental health.

Until we learn to join economic and ecological systems in political thought, we can look forward to adapting our ways of life to changes in local and global ecosystems. In the case of Connecticut and the CO² dilemma, this means that perhaps we can look forward to fishing and boating in Bushnell Park.

(This article appeared in the Op-Ed page of the Hartford Courant on January 2, 1984. Reprinted with permission).

DEPARTMENT OF ENVIRONMENTAL PROTECTION

General Mailing Address:

STATE OFFICE BUILDING
HARTFORD, CONNECTICUT 06106
ALL TELEPHONE EXTENSIONS
PRECEDED BY 566-

